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Satellite Radar Altimetry Over Ice

*Volume 1—Processing and
Corrections of Seasat Data
Over Greenland*

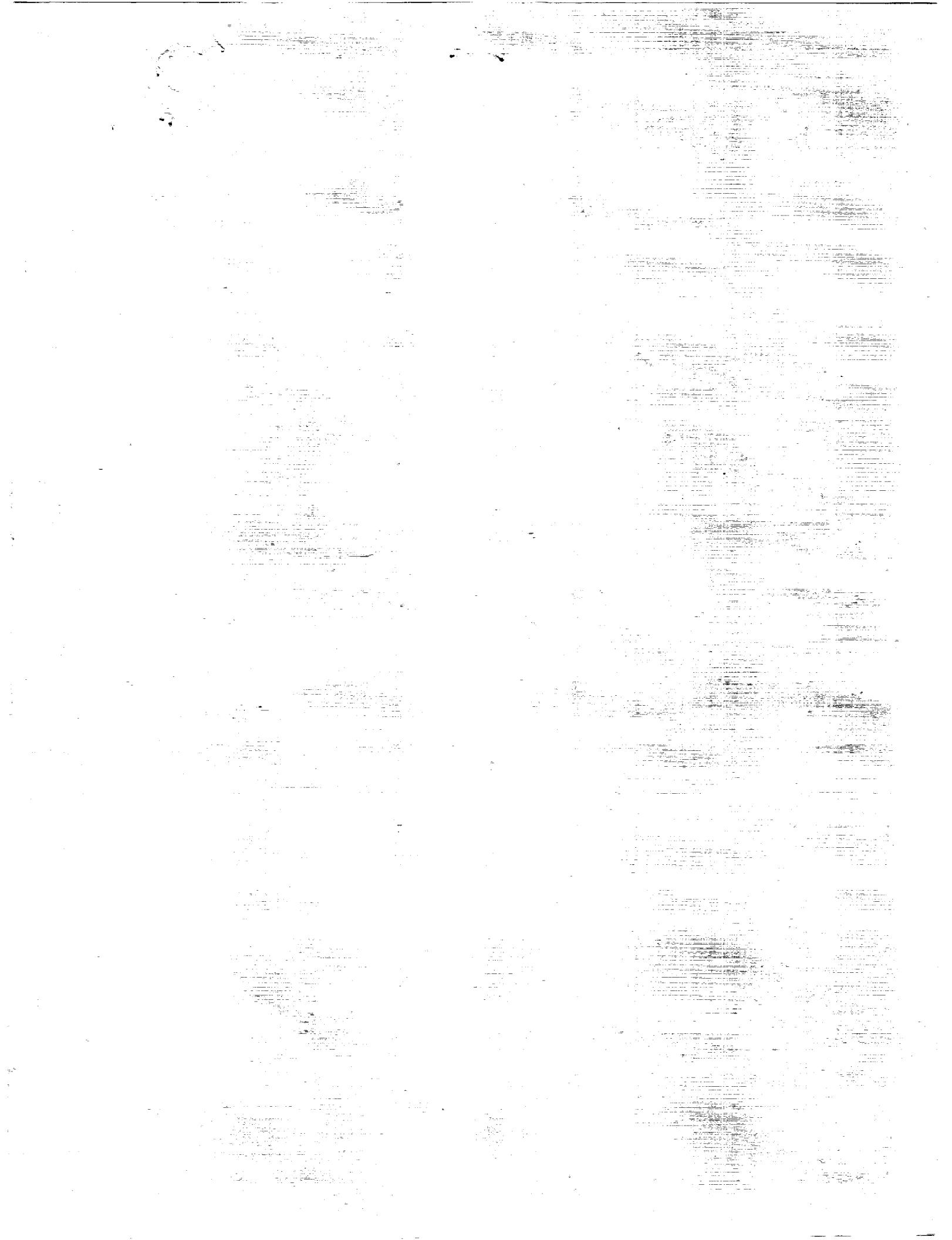
H. Jay Zwally,
Anita C. Brenner,
Judith A. Major,
Thomas V. Martin,
and Robert A. Bindschadler

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*Volume 1—Processing and
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PREFACE

The data-processing methods and ice data products derived from Seasat radar altimeter measurements over the Greenland ice sheet and surrounding sea ice are documented in this first volume of a series. The corrections derived and applied to the Seasat radar altimeter data over ice are described in detail, including the editing and retracking algorithm to correct for height errors caused by lags in the automatic range tracking circuit. The methods for radial adjustment of the orbits and estimation of the slope-induced errors are given. The various levels of ice data sets are described in this report, but the user is referred to Volumes 2 (Greenland) and 4 (Antarctica) for more detailed descriptions of the gridded elevation data sets and the geo-referenced data bases.



SECTION 1.0

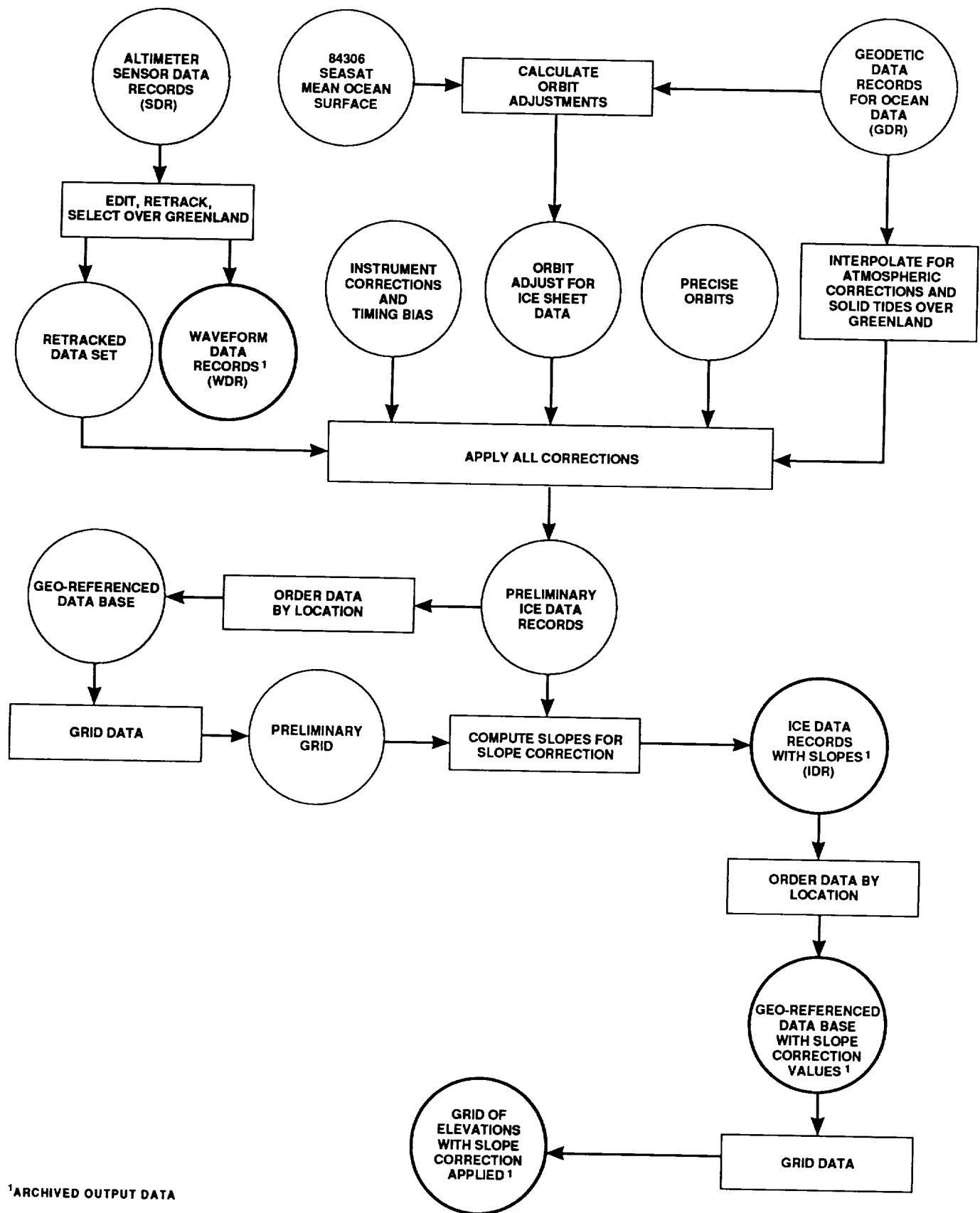
INTRODUCTION

This volume is the first in a series documenting the data-processing methods and ice data products derived from satellite radar altimeter measurements over the ice sheets of Greenland and Antarctica and surrounding sea ice. The data-processing procedures and corrections derived and applied to the Seasat radar altimeter data are described in detail in this report. A flowchart depicting the procedures involved in obtaining the various data products is given in Figure 1. A detailed description of the editing and retracking algorithm is given in Section 2, along with descriptions of the other corrections. The methods for radial adjustment of the orbits and estimation of the slope-induced errors are described. The various levels of ice data sets produced are described in this report, but the user is referred to Volumes 2 and 4 for more detailed descriptions of the gridded elevation data set and the geo-referenced data base.

The input Seasat radar altimeter data, in the form of Geophysical Data Records (GDR's) and Sensor Data Records (SDR's) produced by NASA's Seasat project at the Jet Propulsion Laboratory, were obtained from the NOAA Environmental Satellite Data and Information Service (EDIS) archive on about 1000 magnetic tapes. Development of the data processing methods, the production of higher-level geophysical data products, and analysis and evaluation of the data have been supported at the Goddard Space Flight Center by funding for research and data analysis, provided primarily by NASA's Ocean Processes Program and by the Climate program. Computer programming and technical assistance has been provided by the EG&G Washington Analytical Services Center, Inc. until January 1989 and by ST Systems Corporation since then. Numerous other individuals have provided valuable assistance.

Results have been reported in refereed scientific literature (e.g., Brenner et al., 1983; Martin et al., 1983; Zwally et al., 1983; Thomas et al., 1983; and Gundestrup et al., 1986). In addition, elevation data in various forms have been provided to other scientists and placed in the National Snow and Ice Data Center (NSIDC) and the National Space Science Data Center (NSSDC). The purpose of this series of reports is to document technical details and provide guidance to users of the ice data products.

While all reasonable quality-control efforts have been made to eliminate erroneous data, some data of questionable quality is likely to have persisted, particularly in the lower-level data products. Users should apply normal standards of scientific caution in their use of the data.



1 ARCHIVED OUTPUT DATA

Figure 1. Processes Involved in Obtaining Data Products

The current list of reports is:

Satellite Radar Altimetry over Ice, Volume 1: Processing and Corrections of Seasat Data over Greenland, July 1989. This volume.

Satellite Radar Altimetry over Ice, Volume 2: User's Guide for Greenland Elevation Data from Seasat, July 1989. NASA Reference Publication. _____.

Satellite Radar Altimetry over Ice, Volume 4: User's Guide for Antarctic Elevation Data from Seasat, July 1989. NASA Reference Publication. _____.

Volume 3 will be the Antarctic equivalent of Volume 1. Additional volumes will include descriptions of the data sets being produced by NASA from the radar altimeter data acquired by the U.S. Navy's GEOSAT, using methods similar to those for the Seasat data.

The Seasat spacecraft (e.g., Lame and Born, 1982 and Lame et al., 1980) was launched in late June 1978, and during its brief 110-day lifetime, collected 90 days of nearly continuous radar altimeter data from July 9 through October 10 between the latitudes of 72°S and 72°N. Although designed only for measurements over water, the Seasat radar altimeter (MacArthur, 1978; Tapley et al., 1982; and Townsend, 1980), acquired more than 600,000 useful altimeter range measurements over the continental ice sheets of Greenland and Antarctica.

Over sloping and undulating surfaces, such as ice covered land, or surfaces with highly-variable reflecting characteristics, such as in regions of sea ice, the range to the surface and the characteristics of the received radar pulse changed faster than the response capability of the altimeter electronics. Consequently, it has been necessary to correct each range value for lags of the altimeter range servo-tracking circuitry by a procedure called retracking (Martin et al., 1983). The retracking correction typically had a mean value of + 1.4 m as applied to the surface elevation, a standard deviation of 2.9 m, and maximum and minimum values of ± 15 m. In addition, the pulse-limited footprint (1.6 km minimum diameter), which was located near the satellite nadir point over the relatively flat ocean, was in general located anywhere within the beam-limited footprint (22 km in diameter) over sloping surfaces. The resulting slope-induced error, which was nearly 80 m over slopes of 0.8 degree, can be partially corrected using the procedures described in Brenner et al., 1983. Corrections are also made for errors in orbit determination, atmospheric propagation path-length variations, and earth and ocean tides.

Elevation measurements were obtained at 0.1-second intervals, corresponding to 662-m intervals along the subsatellite ground track. The precision of the corrected range measurements is about 1.6 m overall with a minimum of about 0.25 m in the smoothest regions of the ice sheets

(Zwally et al., 1983). The 5- to 10- cm precision over the ocean is for 1-sec data averages.) The absolute accuracy of the elevations is primarily determined by the limitations on the correction methods for the slope-induced errors and uncertainties in the geoid reference level.

The principal ice data sets produced and/or retained are:

Level 4: Contour maps and gridded elevations with respect to earth ellipsoid and sea level (e.g., this Volume and Volume 2).

Level 3: Geo-referenced data base including all individual elevation measurements (including time, latitude/longitude positions, and slope-correction estimates) accessible by geographic cells (e.g., this Volume and Volume 2).

Level 2: Ice Data Records (IDR's). Orbital-format data records including altimeter parameters, corrected elevations, latitude/longitude positions, AGC, applied corrections, retracking beta parameters, and estimates of along-track and cross-track slope corrections. (this Volume)

Level 1: Waveform Data Records (WDR's). Orbital-format data records including waveform amplitudes by gate, ranges, AGC, and latitude/longitude positions. (this Volume)

Sensor Data Records (SDR's)

Geodetic Data Records (GDR's)

SECTION 2.0

ICE DATA RECORDS

The Seasat altimeter data were released in two forms: the Altimeter Sensor Data Record (hereafter referred to as SDR), and the Geophysical Data Record, GDR. The SDR's were obtained from the NOAA/EDIS archives and contain, among other quantities, the telemetered range measurements between the spacecraft and earth's surface, averaged radar return pulses, the altimeter status flags and the satellite latitude, longitude, and elevation. The data are output in 0.098-sec intervals. The GDR's contain processed SDR data averaged over 1-sec intervals, and the sensor, atmospheric, and surface dynamic corrections necessary to utilize the data in detailed geodetic work. Data over the ice sheets are not available from the GDR's.

To obtain the ice sheet elevation measurements, data from the SDR's are used and the appropriate corrections and adjustments applied. This subset of ice sheet data obtained from the SDR's is referred to as ice data records or IDR's. A detailed description of these records may be found in Table 1. The surface heights, located in bytes 73-76 of the IDR, are referenced to the IUGG 1980 Geodetic Reference Ellipsoid (Moritz, 1980), which is defined with a 6378.137-km semi-major axis of the earth and a flattening ratio of 1/298.257. Heights relative to sea level can be calculated by subtracting the geoid value from the surface height. Geoid values, linearly interpolated from a one-by-one degree GEM10-B geoid grid, are located in bytes 61-64 of the IDR.

Figure 2 is a map of Greenland which depicts the coverage obtained from the IDR's after data were edited and retracked (see Section 2.1). The gaps in the data are a result of the altimeter not being able to maintain valid height measurements over the rougher surfaces of the ice sheets. Table 2 gives a concise catalog of the available Seasat Greenland IDR data. Included in this table are the start and stop locations of each rev, the number of points in each rev, and the data base bins (see Section 4.0) through which each rev traverses. The rev numbers are ordered such that all ascending passes are listed first, ordered by increasing latitude as they cross 315 degrees East Longitude. Then the descending passes are listed using the same ordering criterion as for the ascending passes.

2.1 EDITING AND RETRACKING

As explained in Section 1.0, Seasat altimetry returns over non-ocean surfaces required special processing in order to calculate meaningful height measurements. To understand this processing one must first have an understanding of the return itself.

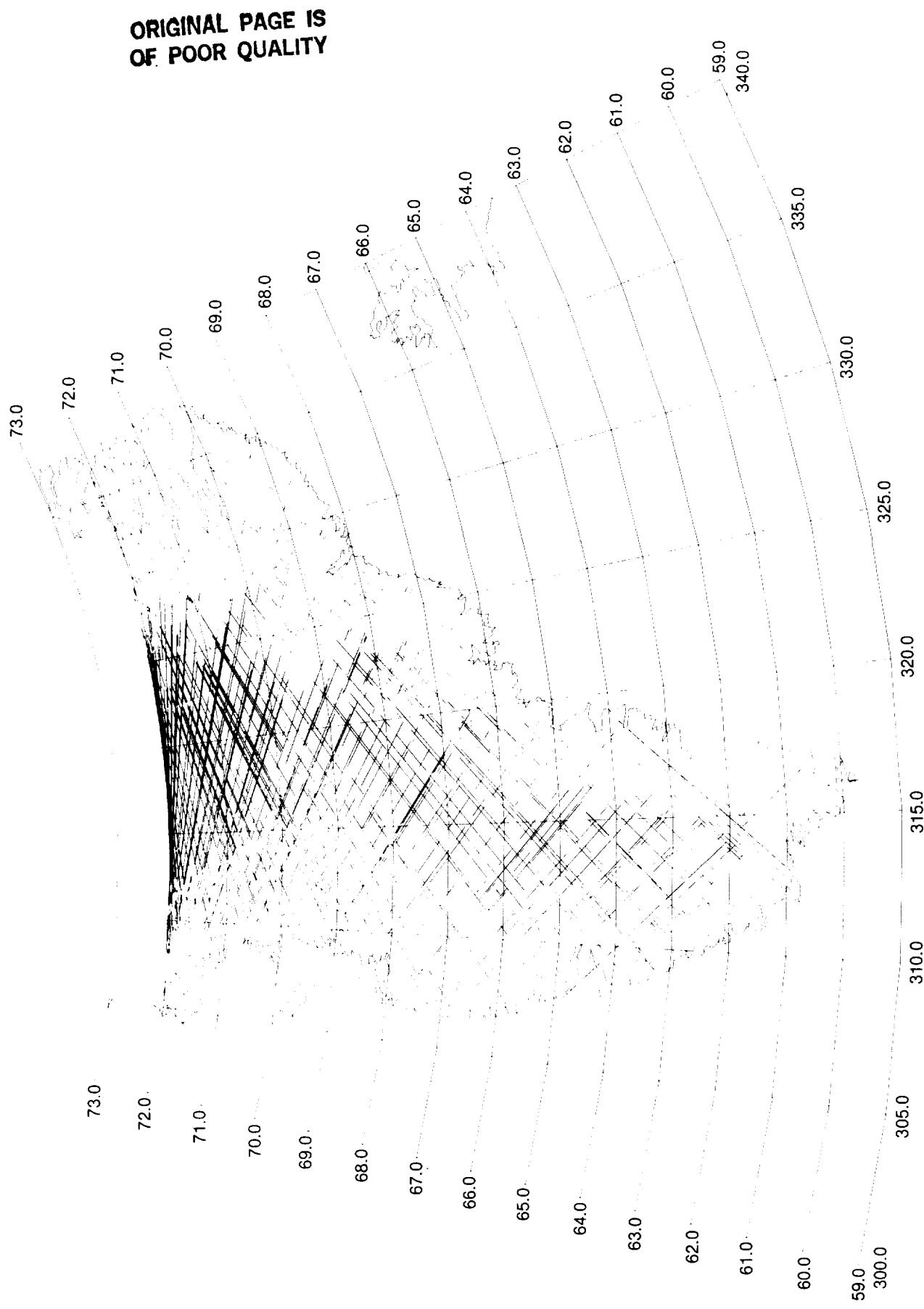


Figure 2. Seasat Greenland Groundtracks

Each altimeter return, referred to as a waveform, consists of the output of a set of 63 gates that span a height window of approximately 30 m. Each gate has a level of return associated with it measured in counts. A typical ocean return from Seasat is presented in Figure 3. The level of return in the first 22 gates is at the noise or pre-pulse level of 4 or 5 counts. The level quickly increases to a relative maximum and then slowly decreases over the latter portion of the window. There are three half-gates at the center that have a spacing of 23 cm instead of 46 cm. The tracking gate is the center of these. The on-board tracker attempts to keep the center of the return leading edge positioned at the tracking gate by predicting the travel time of each pulse based on previous returns. The measurement telemetered from the altimeter is equivalent to the travel time to the tracking gate.

Altimeter returns over non-ocean surfaces vary greatly from this ocean return. Figure 4 shows representative returns over ice sheet surfaces for a Seasat pass over Antarctica (Martin et al., 1983). The Figure 3 sea ice returns are represented by one or more sharp spikes that may or may not be at the tracking gate. As the altimeter travels onto the ice shelf, acquisition is lost, represented as a flat return. On the ice shelf the returns are shaped similar to the oceans, but again are not always centered at the tracking gate. As the satellite moves over the ice sheet, acquisition is again lost temporarily. Over the ice sheets the returns are noisy, have multiple leading edges, and the mid-point of the first leading edge is not always aligned with the tracking gate.

The measurement telemetered from the on-board tracker needs to be corrected for the variation of the mid-point of the leading edge from the tracking gate. This retracking correction, ΔH_{ret} is calculated as

$$\Delta H_{ret} = (Gm-Gt)*g2m \quad (2.1)$$

where

Gm = gate of the mid-point of the leading edge (see Sections 2.1.3-2.1.4),

Gt = the tracking gate (29.5 where the whole gates are numbered from 0 to 59; see Figure 3), and

$g2m$ = the conversion from gates to meters = .4684375 m/gate.

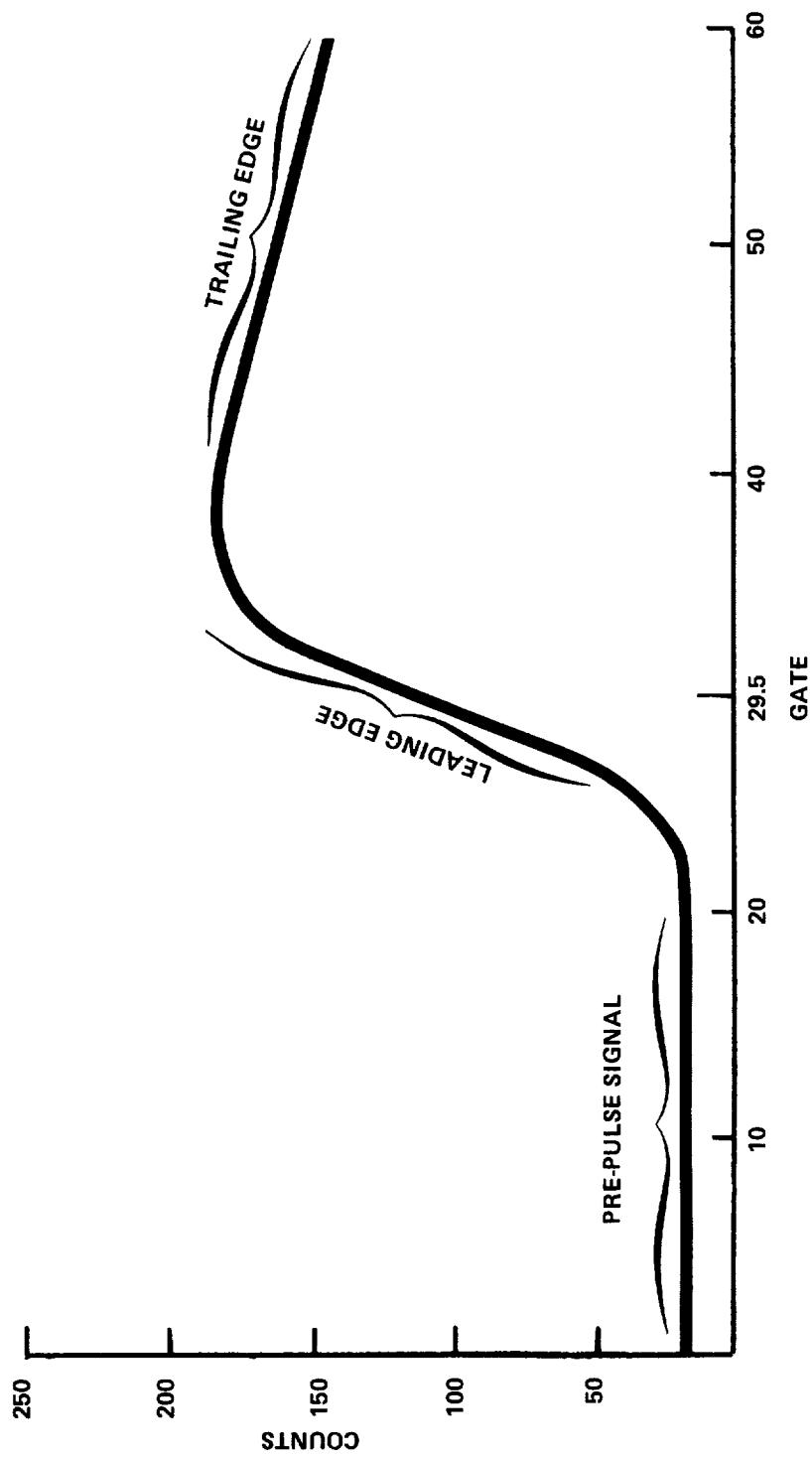
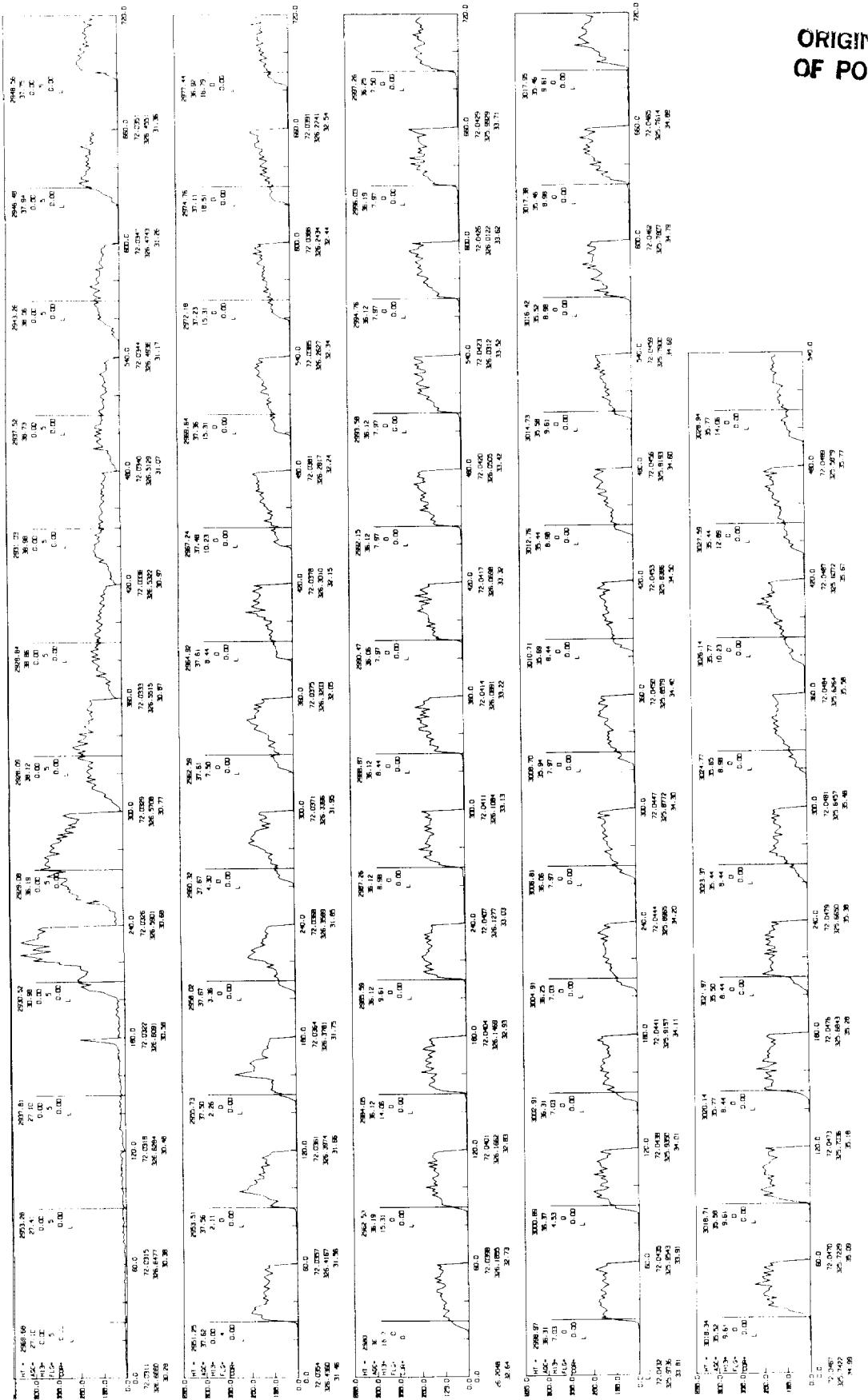


Figure 3. Ideal Ocean Altimetry Return Pulse



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Figure 4. Seasat Ice Sheet Altimeter Waveforms

It then follows that

$$H_{ret_t} = H_{meas_t} + \Delta H_{ret_{t+1}} \quad (2.2)$$

where

H_{ret_t} = the retracked altimeter measurement at time t,

H_{meas_t} = the measurement calculated by the on-board tracker at time t, and

$\Delta H_{ret_{t+1}}$ = the retracking correction calculated from waveform at time t+.098 sec.

Due to the return being telemetered one time step later, the retracking correction for the measurement at time t is calculated from the return at time t+.098 sec. Methods have been developed at NASA/GSFC to calculate the ΔH_{ret} for returns over the ice sheet, ice shelf, and sea ice which can yield valid height measurements. A detailed description of these procedures may be found in Sections 2.1.3 and 2.1.4. Parameters resulting from these retracking techniques may be found in bytes 109-144 of the IDR. The criteria used to automatically select and discriminate between different types of returns are described in the next two sections.

2.1.1 Selecting Retractable Non-Ocean Altimetry Returns

The SDR for Seasat includes all telemetered altimeter data even when the instrument was in calibration or standby mode. Since valid measurements could be acquired when the tracker was in acquisition mode, all data that are not in acquisition or track modes are discarded.

All tracking and acquisition returns have to meet two initial tests to determine if the waveform actually represents the initial return, or if the return is outside the tracking window.

- 1) The counts in the first gate must be less than 100;
- 2) There must be at least one gate with a count value greater than 25.

2.1.2 Categorizing the Returns

The remaining returns are then categorized into two groups. Group one will be referred to as specular and consists of those returns that display a sharp spike. Returns in this category are usually found in regions of sea ice or over flat, desert-type surfaces. The second group, consisting of the remaining returns, is called diffuse and resembles ocean returns. These returns

are found over continental ice and the ice shelves. Different methods are used to retrack each group.

Returns are automatically categorized as either diffuse or specular depending on the existence of a significant spike in the return. To determine this the following algorithm is used. The noise level, Y_n , is calculated as the average number of counts in the first five gates. The maximum, Y_{max} , is calculated as the maximum number of counts in any gate. The value Y_{med} is then calculated using the equation

$$Y_{med} = \frac{(Y_{max} - Y_n)}{2.0} + Y_n . \quad (2.3)$$

The gate number, G_{mid} , is then found as the first gate where the number of counts exceeds Y_{med} . Two sums of consecutive counts from the signal are then formed, Y_{low} and Y_{high} , where

$$Y_{low} = \sum_{i=G_{mid}}^{i=G_{mid}+9} Y_i \quad (2.4)$$

$$Y_{high} = \sum_{i=G_{mid}+10}^{i=G_{mid}+20} Y_i . \quad (2.5)$$

If G_{mid} is so large that there are less than 20 remaining gates, then the number of gates used to form the sums is adjusted. When the ratio of Y_{high}/Y_{low} is ≤ 0.7 , the return is considered specular.

2.1.3 Retracking Specular Type Returns

Specular waveforms are not found in the Seasat altimeter data over Greenland. This is probably due to the absence of sea ice near Greenland during Seasat's lifetime. As a result, all of the Greenland returns are retracked using the diffuse method. However, for the sake of completeness, the method used to retrack specularly shaped returns, which is employed in the region of the Antarctic, will be discussed.

Specular-type returns are defined for this procedure as being characterized by one or more extremely sharp spikes and are retracked by attempting to locate the mid-point or half-power point of the first significant spike. In addition, since the shape of the return essentially records topographic characteristics, parameters are also calculated which define the shape of a single-or double-peak return. Figure 5a shows the five-parameters required to define a single-peak return, while Figure 5b shows the nine-parameters required for a double-peak return.

2.1.3.1 Half-power Point of First Significant Peak

In determining the mid-point of the first significant spike, the location of this spike must first be found. The value of Y_{med} , which is calculated to determine whether or not the return is specularly shaped (Equation 2.3), is used. Starting with the gate number prior to G_{mid} , where G_{mid} is defined to be the gate number whose counts exceed Y_{med} , a gate is sought whose counts exceed or equal 25% of the difference between Y_{max} and Y_n . Upon finding this gate, G_{rise} , it is determined to be the first significant spike if the following conditions are met:

$$Y_{Grise+1} - Y_{Grise} < 0. \quad (2.6)$$

for $Y_{Grise} > Y_{max} * .3$

where

Y_{Grise} is the counts for gate G_{rise} , and

$Y_{Grise+1}$ is the counts for gate $G_{rise}+1$.

Smaller, more rounded waveforms, which might be encountered in the vicinity of an ice shelf, require that the following condition be met:

$$Y_{Grise+1} - Y_{Grise} < (Y_{max} - Y_n) * .05 \quad (2.7)$$

for $Y_{Grise} \leq Y_{max} * .3$.

G_{rise} is incremented by one, up to the maximum number of gates, until one of the above conditions is met, after which the gate of the first significant spike, G_{1st} , and its corresponding counts, Y_{1st} , are used to determine the half-power point of the peak. The count value at the half-power point, Y_{mid1} , is determined as follows:

$$Y_{mid1} = \frac{(Y_{1st} - Y_n)}{2.0} + Y_n. \quad (2.8)$$

The exact gate location of the half-power point, Gtmid1, is then determined by performing a linear interpolation for the count value Ymid1 located between gates X1 and X2, with corresponding count value Y1, Y2.

2.1.3.2 Remaining Parameters to Define Shape

In order to define the exact shape of the specular returns depicted in Figures 5a and 5b, it is necessary to calculate several other parameters in addition to the noise level, the maximum counts of the first significant peak, and the gate location of the half-power point. For the single- and double-peak return, additional quantities which define the width of the significant peak and slope at the half-power point are defined. A double-peak return has four additional quantities calculated: the maximum counts for the second significant peak, the gate location of the half-power point for the second peak, the slope at the second half-power point, and the minimum counts found between the two significant peaks.

The slopes at the half-power point for both the first and second significant peaks, Slp1st and Slp2nd, are determined by the following algorithm:

$$S\text{lp1st} = \frac{Y_2 - Y_1}{X_2 - X_1} . \quad (2.9)$$

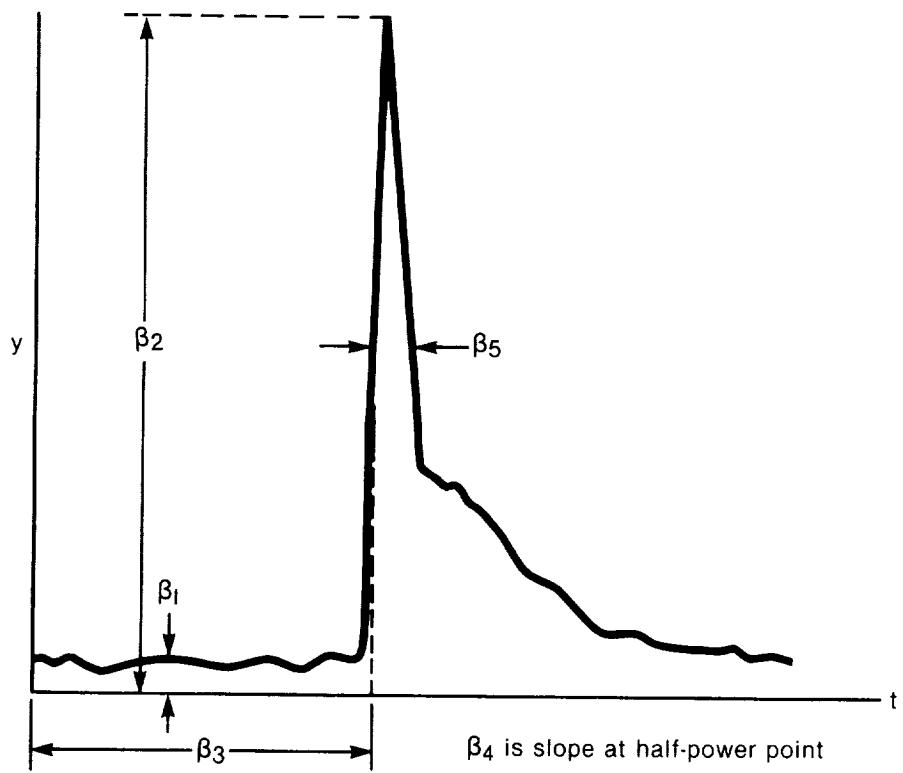
Slp2nd uses the gate locations and corresponding counts determined to surround the half-power point of the second significant peak. These values are found in a manner similar to that of the first peak.

The actual existence of a second significant peak is determined in the following manner. Starting with the gate location of the first significant peak, the difference between counts of consecutive gates is monitored. As soon as the change in successive gates becomes negative, at gate location Gcntmin, it is assumed that another peak has been encountered. At this point, a sum is formed, Totup, which totals the counts in all gates following the Gcntmin. When Totup equals or exceeds 9% of Y1st then the second peak is considered significant. The gate at which the second peak occurs, X2nd, is determined to occur when the difference in the counts of consecutive gates becomes positive.

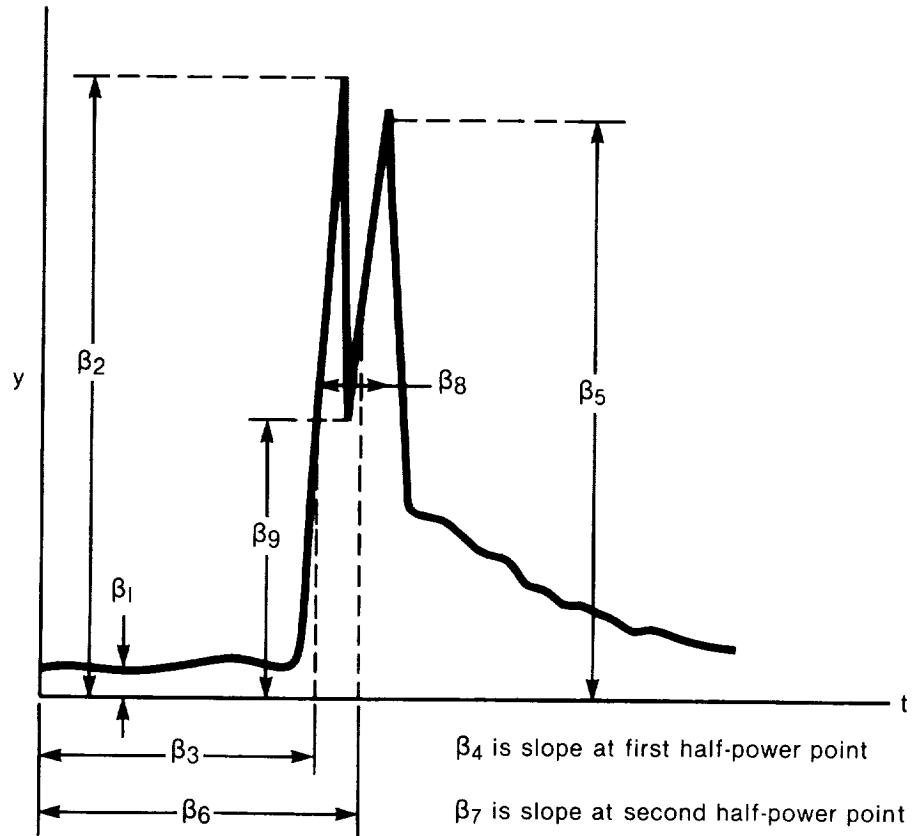
The counts at the second significant peak, Y2nd, are then used in the following manner to calculate the counts at the half-power point of the second peak, Ymid2:

$$Y\text{mid2} = \frac{(Y_2\text{nd} - C\text{ntmin})}{2} + C\text{ntmin} . \quad (2.10)$$

(a) Single Peak



(b) Double Peak



Figures 5a and 5b. Specularly Shaped Waveforms

Again, a linear interpolation is performed in a manner identical with the first significant peak to determine the exact gate location of the second significant peak half-power point, Gtmid2.

The final parameter to be determined is the total width of the peak or peaks at the first half-power point. The width is defined as the number of gates between Gtmid1 (Section 2.1.3.1) and the location, Gtrail, where the trailing edge passes through Ymid1 (Equation 28). The width is computed as follows:

$$\text{Width} = \text{Gtrail} - \text{Gtmid1} . \quad (2.11)$$

In summary, the parameters for a specular return with a single significant peak are as follows:

$$\begin{aligned} \beta_1 &= \text{Yn} \\ \beta_2 &= \text{Y1st} \\ \beta_3 &= \text{Gtmid1} \\ \beta_4 &= \text{Slp1st} \\ \beta_5 &= \text{Width} . \end{aligned} \quad (2.12)$$

The parameters for a specular return with double significant peaks are as follows:

$$\begin{aligned} \beta_1 &= \text{Yn} \\ \beta_2 &= \text{Y1st} \\ \beta_3 &= \text{Gtmid1} \\ \beta_4 &= \text{Slp1st} \\ \beta_5 &= \text{Y2nd} \\ \beta_6 &= \text{Gtmid2} \\ \beta_7 &= \text{Slp2nd} \\ \beta_8 &= \text{Width} \\ \beta_9 &= \text{Cntmin} . \end{aligned} \quad (2.13)$$

2.1.4 Retracking Diffuse-Type Returns

The method used to retrack the diffuse return is to model the return with a function that has the retracking position (the mid-point of the leading edge) as a parameter. The Bayesian least-squares method (Ref. 8) is used to solve for the parameters of the function that best fit the return. For this method, initial estimates of the parameters must be provided. Weights are given to these initial estimates that designate how well each parameter is known relative to the others.

Residuals are then calculated between the return value and the function value at each gate. These residuals are weighted based on their proximity to the mid-point of the leading edge position. A minimum to the sum of these squared weighted residuals is sought by an iterative method which simultaneously adjusts all of the function parameters. The process is repeated until convergence or until the maximum number of iterations is reached. Because linear methods are used to solve a non-linear problem the procedure can be numerically unstable. Checks are done to assure the reasonableness of the results. The key to making this method function correctly is in the choice of the initial estimates and weighting functions.

The theory of solving for the function parameters using Bayesian least-squares can be found in Ref. 8. The actual equations used will be presented here without justification.

Given an overdetermined set of equations $MX=R$ where

$$M = \text{the matrix of partials} \quad \left[\begin{array}{ccc} \frac{\partial c_1}{\partial \beta_1} & \dots & \frac{\partial c_1}{\partial \beta_n} \\ \vdots & & \vdots \\ \frac{\partial c_m}{\partial \beta_1} & \dots & \frac{\partial c_m}{\partial \beta_n} \end{array} \right] \quad m > n \quad (2.14)$$

$$x = \text{column vector} = \left[\begin{array}{c} \beta_{c1} - \beta_1 \\ \vdots \\ \beta_{cn} - \beta_n \end{array} \right] \quad (2.15)$$

$$R = \left[\begin{array}{cc} m_1 & -c_1 \\ \vdots & \vdots \\ m_m & -c_m \end{array} \right] \quad (2.16)$$

and

m_i = observed value (counts at $t=$ gate i),

c_i = calculated values of m_i based upon a given set of parameters β ,

β_j = current best estimate of the model parameters β ,

β_{cj} = corrected best estimate of the model parameters β ,

i = gate number (0 - 59), and

n = number of parameters in the function.

We can then define a weight matrix, W

$$W = \begin{bmatrix} wt_i & & 0 \\ & \ddots & \\ & & wt_m \end{bmatrix} \quad (2.17)$$

where wt_i is the weight associated with each observation i .

If we multiply both sides of the equation by W we get

$$WMX = WR .$$

Multiplying through by M^T gives

$$M^TWMX = M^TWR . \quad (2.18)$$

The solution of X is solved for as

$$X = [M^TWM]^{-1} M^TWR \quad (2.19)$$

where M^TWM is referred to as the normal matrix. To add information as to the validity of the current best estimate of the model parameters the a priori covariance matrix V_o is included

$$V_o = \begin{bmatrix} wt_{\beta 1} & & 0 \\ & \ddots & \\ & & wt_{\beta n} \end{bmatrix} \quad (2.20)$$

where wt_{β_j} = weight associated with the a priori value of parameter j . This matrix is then added to the normal matrix before it is inverted so the equation becomes

$$X = [M^T W M + V_0]^{-1} M^T W R . \quad (2.21)$$

X then is the vector giving the new best estimate of the β parameters.

2.1.4.1 The Function Representing the Altimeter Return

It has been shown (Miller and Brown, 1974) that the mean return waveform over a Gaussian surface can be mathematically described using the function

$$c(t) = \beta_1 + \beta_2 * P(W) \quad (2.22)$$

where

$$P(W) = \int_{-\infty}^W Z(q) dq \quad (2.23)$$

$$Z(q) = \frac{1}{\sqrt{2\pi}} \exp \left(\frac{-q^2}{2} \right) \quad (2.24)$$

$$W = \frac{t - \beta_3}{\beta_4} . \quad (2.25)$$

This assumes that the pointing angle errors have negligible effects on the waveform shape. This also represents the ice sheet waveforms very well if it is modified to include a slope to the trailing edge. The modified function used to represent the diffuse-type waveforms is chosen as

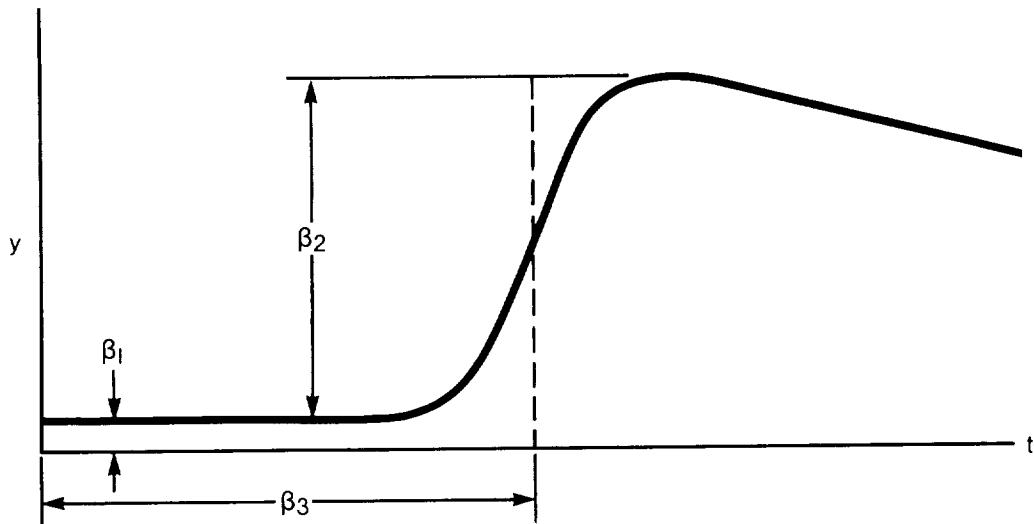
$$c(t) = \beta_1 + \beta_2 (1 + \beta_5 Q(x)) P(W) \quad (2.26)$$

where

$$\begin{aligned} Q(x) &= 0 \text{ for } t < \beta_3 + 0.5 \beta_4 \\ &= \frac{t - x}{\beta_4} \text{ for } t > \beta_3 + 0.5 \beta_4 . \end{aligned}$$

This is plotted in Figure 6a where

(a) Single-Ramp Function



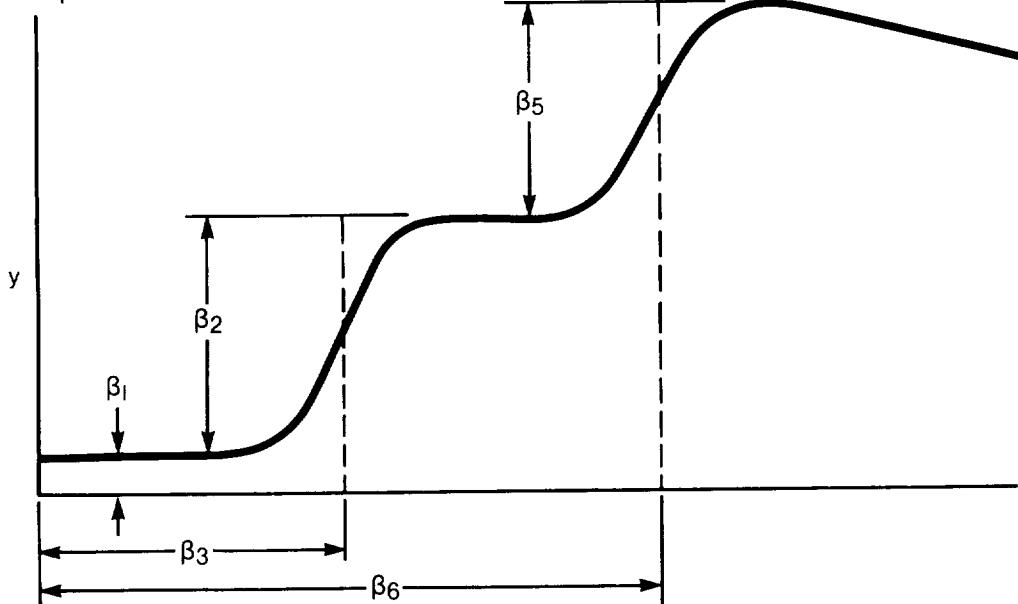
β_4 is the waveform risetime parameter

$$y = \beta_1 + \beta_2 \frac{(t - \beta_3)}{\beta_4} P \quad \text{where } Q = \begin{cases} 0 & \text{for } X < \beta_3 + 0.5 \beta_4 \\ 1 & \text{for } X \geq \beta_3 + 0.5 \beta_4 \end{cases}$$

$$X = t - (\beta_3 + 0.5 \beta_4)$$

$$P(z) = \int_{-\infty}^z \frac{1}{\sqrt{2\pi}} \exp(-q^2/2) dq$$

(b) Double-Ramp Function



β_4 and β_7 are risetime parameters for the 1st and 2nd ramp respectively

$$\text{Where } y = \beta_1 + \beta_2 P \frac{(t - \beta_3)}{\beta_4} (1 + \beta_9 Q(x_1)) + (\beta_5 P \frac{(t - \beta_6)}{\beta_7} (1 + \beta_3 Q(x_2)))$$

$$x_1 = t - \beta_3 - 0.5 \beta_4 \quad Q(x) = \begin{cases} 0 & \text{for } x < 0 \\ 1 & \text{for } x \geq 0 \end{cases} \quad P(z) = \int_{-\infty}^z \frac{1}{\sqrt{2\pi}} \exp(-q^2/2) dq$$

$$x_2 = t - \beta_6 - 0.5 \beta_7$$

Figures 6a and 6b. Diffusely Shaped Waveforms

$$x = \beta_3 + 0.5 \beta_4 .$$

The partials of this function with respect to each parameter are

$$\frac{\partial c}{\partial \beta_1} = 1.0 \quad (2.27)$$

$$\frac{\partial c}{\partial \beta_2} = P(W) + \beta_5 Q P(W) \quad (2.28)$$

$$\frac{\partial c}{\partial \beta_3} = -\beta_2 \left\{ \frac{(1+\beta_5 Q)}{\beta_4} \frac{\partial P}{\partial W} + P(W) \beta_5 \right\} \quad (2.29)$$

$$\frac{\partial c}{\partial \beta_4} = \beta_2 \left\{ \frac{(1+\beta_5 Q)}{\beta_4} \frac{\partial P}{\partial W} W + \beta_5 \frac{P(W)}{2} \right\} \quad (2.30)$$

$$\frac{\partial c}{\partial \beta_5} = \beta_2 Q P(W) \quad (2.31)$$

where

$$\frac{\partial P}{\partial W} = \frac{1}{\sqrt{2\pi}} \exp \left(\frac{-W^2}{2} \right) .$$

The value of β_3 is the mid-point of the leading edge, G_m . As previously noted, some of the returns display multiple leading edges. A nine-parameter function is used to represent these returns, where the mid-point of the first leading edge is still β_3 . The mid-point of the second leading edge, β_6 , probably represents a return from another surface in the footprint and is being stored for future use. The nine-parameter function is

$$c(t) = \beta_1 + \beta_2 P(W_1) (1 + \beta_9 Q(x_1)) + \beta_5 P(W) (1 + \beta_8 Q(x_2)) \quad (2.32)$$

This is plotted in Figure 6b where

$$x_1 = t - \beta_3 - 0.5 \beta_4$$

$$x_2 = t - \beta_6 - 0.5 \beta_7$$

$$w_1 = \frac{t-\beta_3}{\beta_4}$$

$$w_2 = \frac{t-\beta_6}{\beta_7}$$

The partials of this nine-parameter function are

$$\frac{\partial C}{\partial \beta_1} = 1.0 \quad (2.33)$$

$$\frac{\partial C}{\partial \beta_2} = P(W_1) [1 + \beta_9] Q_1 \quad (2.34)$$

$$\frac{\partial C}{\partial \beta_3} = -\beta_2 \left[\frac{(1 + \beta_9 Q_1)}{\beta_4} \frac{\partial P}{\partial W_1} + P(W_1) \beta_9 \right] \quad (2.35)$$

$$\frac{\partial C}{\partial \beta_4} = -\beta_2 \left[\frac{(P(W_1) \beta_9)}{2} + \frac{(1 + \beta_9 Q_1)}{\beta_4} \frac{\partial P}{\partial W_1} W_1 \right] \quad (2.36)$$

$$\frac{\partial C}{\partial \beta_5} = 1 + \beta_8 Q_2 P(W_2) \quad (2.37)$$

$$\frac{\partial C}{\partial \beta_6} = -\beta_5 [P(W_2) \beta_8 + \frac{(1 + \beta_8 Q_2)}{\beta_7} \frac{\partial P}{\partial W_2}] \quad (2.38)$$

$$\frac{\partial C}{\partial \beta_7} = -\beta_5 \left[\frac{(1+\beta_8 Q_2)}{\beta_7} W_2 \frac{\partial P}{\partial W_2} + \frac{P(W_2)}{2} \beta_8 \right] \quad (2.39)$$

$$\frac{\partial C}{\partial \beta_8} = \beta_5 Q_2 P(W_2) \quad (2.40)$$

$$\frac{\partial C}{\partial \beta_9} = \beta_2 Q_2 P(W_1) \quad (2.41)$$

2.1.4.2 Setting the Initial Estimates for the Parameters

Initial estimates of each parameter are calculated from each individual return. To calculate these the general shape of the waveform is mathematically described by defining a mean slope and average value (bias) for every whole gate. For gates 4 through 56, the mean slopes and biases correspond to a straight line that is fit using least-squares minimization through the gate in question and the six surrounding gates. The biases for gates 1 through 4 are taken as the gate values and the slopes are defined as zero. For gates 57 through 60 the biases are the gate values and the slopes are defined as the slope calculated for gate 56. This set of slopes and biases is then interrogated to determine the locations of the leading edges and how many occur in the waveform.

The conditions required for a leading edge at gate I_r are:

- 1) The Slope(I_r) must be greater than a given value, $Thsl$. A value of $Thsl=0.5$ count/gate is used to find the first leading edge, for succeeding leading edges $Thsl$ is set to 1.0 count/gate. These numbers were chosen by visually and mathematically evaluating many typical ice sheet waveforms to determine when a leading edge designating a valid return could be perceived.
- 2) The Slope(I_r) must be a relative maximum, ie:

$$\text{Slope}(\text{Ir}) > \text{Slope}(\text{Ir}-1)$$

$$\text{Slope}(\text{Ir}) > \text{Slope}(\text{Ir}+1)$$

3) There must be a significant increase in counts after the leading edge compared with that before the leading edge, i.e.:

$$\text{Bias}(Ir+3) - \text{Bias}(Ir-3) > \text{Thbs}$$

where

$$\begin{aligned}\text{Thbs} &= 13.5 \text{ counts for first leading edge} \\ &= 20.0 \text{ counts for succeeding leading edge.}\end{aligned}$$

4) If there was a leading edge already detected within 3 gates of Ir then the location is taken as that with the larger slope.

The initial estimates of the function parameters are then calculated from the position of the leading edge(s) and the Slopes and Biases. The five-parameter function (2.26) is used when only one leading edge is found, the nine-parameter function (2.32) is used when two or more leading edges are found.

Initial estimates, β_1^0 , and the corresponding standard deviations of these estimates, Sig(1) through Sig(5), for the five-parameter function are defined as:

$$\begin{aligned}\beta_1^0 &= \text{Bias}(4) \text{ (counts)} & \text{Sig}(1) &= 0.01 \text{ (count)} \\ \beta_2^0 &= \text{Bias}(Ir+3) - \text{Bias}(4) \text{ (counts)} & \text{Sig}(2) &= 10.0 \text{ (counts)} \\ \beta_3^0 &= Ir \text{ (gate)} & \text{Sig}(3) &= .1 \beta_0(4) \text{ (gates)} \\ \beta_4^0 &= \{|\text{Bias}(Ir+3) - \text{Bias}(Ir-3)| / \\ &\quad \text{Slope}(Ir)\} * 0.5 \text{ (gate)} & \text{Sig}(4) &= .01 \beta_0(4) \text{ (gates)} \\ \beta_5^0 &= 0.0 \text{ (count/gate)} & \text{Sig}(5) &= .01 \text{ (count/gate).}\end{aligned}\tag{2.42}$$

Initial estimates and the corresponding standard deviations for the nine-parameter function are defined as:

β_1^o	= Bias(4) (counts)	Sig(1) = .01 (count)
β_2^o	= Bias(Ir1+3)-Bias(4) (counts)	Sig(2) = 0.1 (count)
β_3^o	= Ir1 (gates)	Sig(3) = .05 $\beta_o(4)$ (gates)
β_4^o	= {[Bias(Ir1+3)-Bias(Ir1-3)]/Slope(Ir1)}*0.5 (gates)	Sig(4) = .005 $\beta_o(4)$ (gates)
β_5^o	= Bias(Ir2+3)-Bias(Ir1+3) (counts)	Sig(5) = 0.1 (count)
β_6^o	= Ir2 (gates)	Sig(6) = .05 $\beta_o(7)$ (gates)
β_7^o	= {[Bias(Ir2+3)-Bias(Ir2-3)]/Slope(Ir2)} (gates)	Sig(7) = .005 $\beta_o(7)$ (gates)
β_8^o	= 0.0 (count/gate)	Sig(8) = .01 (count/gate)
β_9^o	= 0.0 (count/gate)	Sig(9) = .01 (count/gate)

(2.43)

where

Ir1 is the predicted gate corresponding to the mid-point of the first leading edge

Ir2 is the predicted gate corresponding to the mid-point of the second leading edge.

2.1.4.3 Calculating the Weight Matrix, W

The weight associated with each observation, wt_i , is selected to optimize the fit in the vicinity of the leading edge.

$$wt_i = 1 + K_1 * [\exp(K_2) + K_3] \quad (2.44)$$

where

$$K_1 = (I_{ter}-1) * 0.5$$

$$I_{ter} = \text{iteration number}$$

$$K_2 = T_c + 0.5$$

$$= \text{Min}(K_2, 60)$$

$$= \text{Max}(K_2, 1)$$

$$T_c = X_i - \beta_3 - \text{Max}(5.0, \beta_4) \text{ for 5-parameter function}$$

$$= X_i - \beta_6 - \text{Max}(5.0, \beta_7) \text{ for 9-parameter function}$$

X_i = gate number of the i th observation

for the five-parameter function

$$K_3 = 0 \text{ for } |T_c| \geq 2.0$$

$$= 1 \text{ for } |T_c| < 2.0$$

for the nine-parameter function

$$K_3 = 0 \text{ for } |T_c| \geq 5.0$$

$$= 1 \text{ for } |T_c| < 5.0 .$$

2.1.4.4 Calculating the Covariance Matrix, V_o

A priori values of V_o are calculated from the sigmas in equations (2.42) and (2.43) as follows:

$$w_{t_{\beta_j}} = wscale/\text{Sig}(j)^2 \quad (2.45)$$

$$wscale = 1 + .6 * K * H1/3/(120*g2m) \quad (2.46)$$

$$H1/3 = 1.875 * \beta_4$$

$$K = 4$$

Using the function, $wscale$, causes the initial estimate information to have a greater effect on the solution when the rise time is large.

After each iteration, n , the values of $\text{Sig}(3)$, $\text{Sig}(4)$ and K are altered as follows:

$$\text{Sig}(3) = \text{Sig}(3)_{n-1} * 0.1$$

$$\text{Sig}(4) = \text{Sig}(4)_{n-1} * 10.0$$

$$K_n = K_{n-1} + .5 \quad .$$

This has the effect of weighting the current best estimate of the leading edge position more and the rise time of the leading edge less. This has proven to speed up convergence.

2.1.4.5 Method of Iteration

An iterative scheme is used starting out with the initial estimate of the β parameters. The Bayesian least-squares method is then used to solve for another set of β parameters that better fits the data. Iterations are performed always using the current set for the best estimate until ΔH_{ret} , as calculated from β_3 (2.1), converges to within 10 cm or the number of iterations exceeds 7.

Each succeeding set of β parameters is checked for reasonableness using these criteria:

$$\begin{aligned} 0.0 &< \beta_2 \\ 0.0 &< \beta_3 < 60.0 \\ 0.0 &< \beta_4 \\ \beta_3 &< \beta_6 < 60.0 \\ 0.0 &< \beta_7 . \end{aligned}$$

If any of the criteria fail, then the fit is considered unsuccessful and the waveform is discarded.

After convergence or the maximum number of iterations is reached, tests are then made to assure that the values reasonably represent the return. The rms of the residuals between the waveform and the function for the portion of the waveform from gate zero to just past the top of the leading edge is calculated.

$$RMS_E = \frac{\sum_{i=1}^{Iedit} (C_i - m_i)^2}{Iedit}$$

where

$$\begin{aligned} Iedit &= \beta_3 + 0.5 \beta_4 \text{ for the five-parameter function} \\ &= \beta_6 + 0.5 \beta_7 \text{ for the nine-parameter function.} \end{aligned}$$

If RMS_E is greater than 20.0 counts then the fit is unacceptable. If the nine-parameter function is being fit and the process is unsuccessful, then the initial estimates are reset to

coincide with the initial estimates for the first leading edge and a five-parameter fit is tried. If problems occur during the five-parameter fit, the initial estimates are altered so that the leading edge position is taken as the gate, I_r , where Slope (I_r) (as defined in Section 2.1.4.2) is a maximum for the waveform. If the fit is still unsuccessful, then the waveform is discarded.

The procedures explained here and the numerical values given yield the best results to date. Wherever possible values were chosen based on theory, but many times trial and error was necessary. At the time the Seasat Greenland data were processed, the procedures and numerical values differed slightly. There was no RMS_E check as explained in the last part of Section 2.1.4.5, nor were the initial parameter values altered if an unsuccessful fit was made. The variables that were different and their values for the Greenland processing were:

Thbs = 5.0 counts for the first leading edge
= 10.0 counts for the second leading edge

Sig(3) = $\beta_o(4)$ (for the five-parameter function)

Sig(4) = $0.1 \beta_o(4)$.

A direct consequence of these differences was that the entire Greenland data set had to be visually reviewed to assure that the fit adequately represented the data. This resulted in approximately 1% of the data being discarded which would not have been rejected using newer methods. The newer methods described here identify these problems automatically.

2.2 SENSOR-RELATED CORRECTIONS

After the ice altimeter data are edited and retracked, the precise orbits from NASA/GSFC (PGS-S4) are used to calculate the measured ice sheet elevation above the ellipsoid (Lerch et al., 1982). Corrections are then applied to correct for sensor-related biases.

Both the time tag and center of gravity corrections are calculated using the algorithms released by JPL (Lorell, 1979). These are summarized below.

2.2.1 Time Tag Correction

The SDR time tag, t_{SDR} , is corrected for a track mode correction and a signal travel time correction so that the resultant data time, t , refers to the time of signal reflection from the ice sheet.

$$t = t_{\text{SDR}} - 0.0794 + H/c \quad (2.47)$$

where

$$c = 2.99792458 \times 10^8 \text{ m/sec.}$$

H = spacecraft altitude in meters, and

0.0794 is the track mode correction in seconds.

2.2.2 Center of Gravity Correction

The correction applied to make the spacecraft center of gravity the height reference point is

$$\Delta H_{\text{cg}} = Z_{\text{cg}} - Z_{\text{cone}} \quad (2.48)$$

where

Z_{cg} = the distance from the altimeter base plate to the spacecraft center of gravity. This varied during the flight due to maneuvers. Table S-07 of Lorell (1979) is used to obtain Z_{cg}

Z_{cone} = -1.238 m which is the sum of the distance from the feed flange on the antenna to the base plate and a distance corresponding to a time bias in the electronic circuitry.

This correction is located in bytes 49-52 of the IDR.

2.3 ATMOSPHERIC CORRECTIONS

The measurements are corrected for ionospheric and tropospheric refraction using parameters supplied by JPL on the GDR's (Lorell et al., 1980).

2.3.1 Ionosphere Correction

The ionosphere correction for the ice data, ΔH_{ION} , is calculated by linearly interpolating from the ionosphere corrections on the GDR's. Bytes 57-60 on the IDR contain the value of this correction. A detailed description of the algorithm used is given in Lorell et al., (1980).

2.3.2 Troposphere Correction

The wet tropospheric correction is calculated using the following equations explained in Lorell et al., (1980).

$$\Delta H_{TROP_{WET}} = 2.277 \cdot 10^{-3} \cdot E_o (1.25503/T_K + 0.5) \quad (2.49)$$

where

$$E_o = 6.11 \cdot H_R \cdot 10^{(7.5 \cdot T_K - 273.16)/(T_K - 35.86)}$$

T_K is the surface temperature calculated by assuming a linear temperature profile with boundary conditions:

$$\text{at sea level } T_K = 273.0\text{K}$$

$$\text{at 3200m above sea level } T_K = 243.0\text{K, and}$$

H_R is the relative humidity (assumed to be 100% over the ice sheet).

The dry tropospheric correction is calculated from the equation

$$\Delta H_{TROP_{DRY}} = 2.277 \cdot 10^{-3} \cdot \{P \cdot [1.0 + 0.0026 \cdot \cos(\phi)]\} \quad (2.50)$$

where

ϕ = subsatellite latitude,

P = $P_o \cdot (1.0 - 1.1138 \cdot 10^{-4} \cdot Ht)$,

P_o - is the atmospheric pressure interpolated from the GDR's, and

Ht - is the ice sheet elevation above sea level in meters.

The total height correction due to the troposphere is

$$\Delta H_{TROP} = \Delta H_{TROP_{WET}} + \Delta H_{TROP_{DRY}} \quad (2.51)$$

The troposphere correction may be found in bytes 53-56 of the IDR.

2.4 SURFACE DYNAMIC CORRECTIONS

The solid earth tides are computed by linearly interpolating their values from the GDR's. The resultant interpolated value may be found in bytes 83-84 of the IDR.

2.5. ORBITAL CORRECTIONS

The NASA/GSFC PGS-S4 orbits which are used to improve the height measurements, have rms radial errors of 1.5 m. In an effort to reduce the radial error of these orbits, a technique was devised to further improve the orbit accuracy by referencing the orbits to a common ocean surface. Previous attempts to adjust the orbits using crossover minimization techniques with the ice sheet crossovers proved unsuccessful due to extreme segmentation of the data (see Figure 2). The new technique is not dependent upon the ice data but upon ocean altimetry, and utilizes the smoothed Seasat 84306 global ocean surface (Marsh et al., 1986). Through crossover minimization techniques the radial orbit error for the 84306 ocean surface has been reduced to 11 cm in the open ocean areas.

The method involves obtaining the residuals between the Seasat ocean data for passes which traverse Greenland, and the smoothed 84306 ocean surface. Using least-squares minimization, these residuals are then fit to a linear or quadratic function depending on the proximity of the data to Greenland. The function is, in turn, interpolated or extrapolated to determine the value of the orbit adjustment over Greenland which is to be subtracted from the surface height. This function is of the following form:

$$f(t) = C_0 + C_1 \Delta t + C_2 \Delta t^2 \quad (2.52)$$

where

C_0, C_1, C_2 are the coefficients of the fit where the units are meters, meters/fractions of a day and meters/(fractions of a day)², respectively, and

Δt is the time from the start of the pass in fractions of a day.

Since this method attempts to adjust for orbit error only, the ocean data which are used must have all sensor, atmospheric, and surface dynamic corrections applied. The ocean data used in the adjustment are obtained from the Seasat Geophysical Data Records (GDR's), as corrected by JPL (Lorell et al., 1980).

Since the orbit error is strongly periodic, with a dominant frequency of two cycles per one revolution, only data from the northern hemisphere need to be used in computing the orbit adjustment over Greenland.

The distribution of the data affects the way in which the residuals are fit. To aid in categorizing the distributions of data, the northern hemisphere is subdivided into five ocean regions: 1) the area to the east of Greenland and within 1000 km. of the coast; 2) the area to the east of Greenland from 1000 km. from the coast to the Greenwich meridian; 3) the Indian Ocean; 4) the area to the west of Greenland between Greenland and North America; and 5) the Pacific Ocean (see Figure 7). The type of fit performed depends upon particular regions containing a minimum amount of data. If the criteria are not met, then no fit is performed.

Figure 7 summarizes the type of fit which is performed depending upon the region(s) in which data are found. An 'X' in regions 1, 2, 3 or 5 represents a minimum of 10 points, while region 4, due to its limited open ocean area, requires a minimum of 19 points. Linear fits are performed when data are found either very close to Greenland or are widely separated from Greenland. Quadratic fits are performed when the data are more evenly distributed over several regions.

After the coefficients for the fit are initially determined, outlying data which satisfy the following criterion are removed:

$$|H(t) - f(t)| \geq m * RMS \quad (2.53)$$

where

m is an integer editing multiplier,

RMS is the rms between the residual heights and the function $f(t)$, and

$H(t)$ is the surface elevation of the datum point.

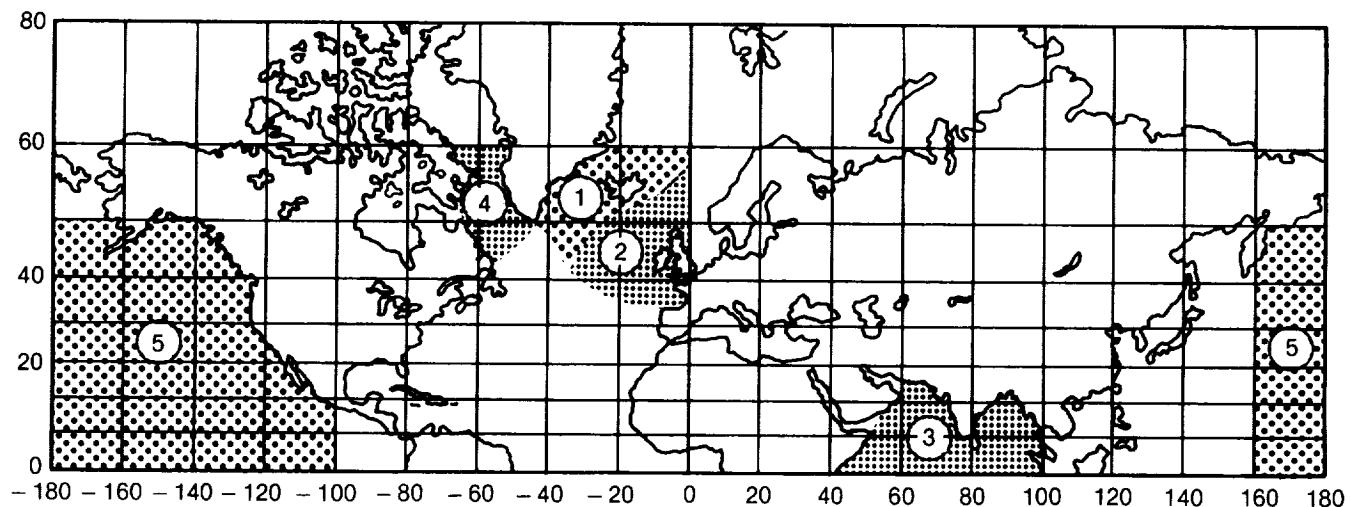


Figure 7. Orbit Adjustment Regions and Effects of Data Distribution on the Orbit Adjustment Fit

REGIONS (MINIMUM NUMBER OF POINTS)					TYPE OF FIT L = LINEAR Q = QUADRATIC
1 (10)	2 (10)	3 (10)	4 (19)	5 (10)	
X			X		L
X			X		L
		X		X	L
	X			X	L
		X		X	Q
	X	X		X	Q
		X	X	X	Q
X			X		Q

'X' INDICATES A REGION CONTAINING THE MINIMUM NUMBER OF POINTS

The remaining data are then used to solve for the function. This process is repeated until either the latest computed rms does not change by more than .02 m from the previous iteration, or 15 iterations are completed. In the case of the Seasat Greenland data, an editing multiplier of 4.0 is used with an initial rms of 20.0 m.

After solving for the coefficients and removing outliers, the function must satisfy a final test. For a linear function, the orbit adjustments are computed at the endpoints of the pass. If the absolute value of the orbit adjustment at either endpoint exceeds 3.0 m, then the function is not used. In the case of a quadratic function, the extremum of the function is first located. If the extremum is outside the endpoints of the data just fit, then the endpoints of the pass are checked as in the linear case. If the extremum lies between the endpoints, its value is checked. Again, a 3.0 m adjustment is deemed too large and if exceeded, an attempt is made to refit the data with a linear function. Of the 331 GDR passes for which an orbit adjustment was computed, 181 resulted in quadratic fits and 150 in linear fits. Of the 194 quadratic fits initially attempted, 12 failed the extremum test and were refit using a linear function. Of these, only one failed the endpoint test.

Two examples of results from the orbit adjustment procedure are shown in Figures 8 and 9. In the first case (Figure 8), data which are found in close proximity to Greenland are fit by a linear function. The latitude and east longitude of the points along the pass closest to the west and east coasts of Greenland are indicated. A linear function is fit to the smoothed ocean surface residuals. The orbit adjustment in the region traversing Greenland is indicated by dashes. Figure 9 shows the orbit adjustment results when a quadratic fit is necessary due to data being available just off Greenland's east coast and in the Pacific Ocean. The final rms between the data and function are 27 cm in the linear case and 14 cm the quadratic case.

Table 3 summarizes the orbit adjustments computed for each GDR rev at 310, 320, and 330 East Longitudes, representing the west coast, central region, and east coast of Greenland. Also included are the coefficients for the function (Equation 2.52) and the elapsed time in fractions of a day from the start point of the pass used to compute the adjustment for the longitude in question.

Utilizing Equation (2.52), the orbit adjustment is then computed for each Seasat IDR, and subtracted from the surface height. The orbit adjustment and its corresponding rms are located in bytes 93-96 and 97-100, respectively, of the IDR.

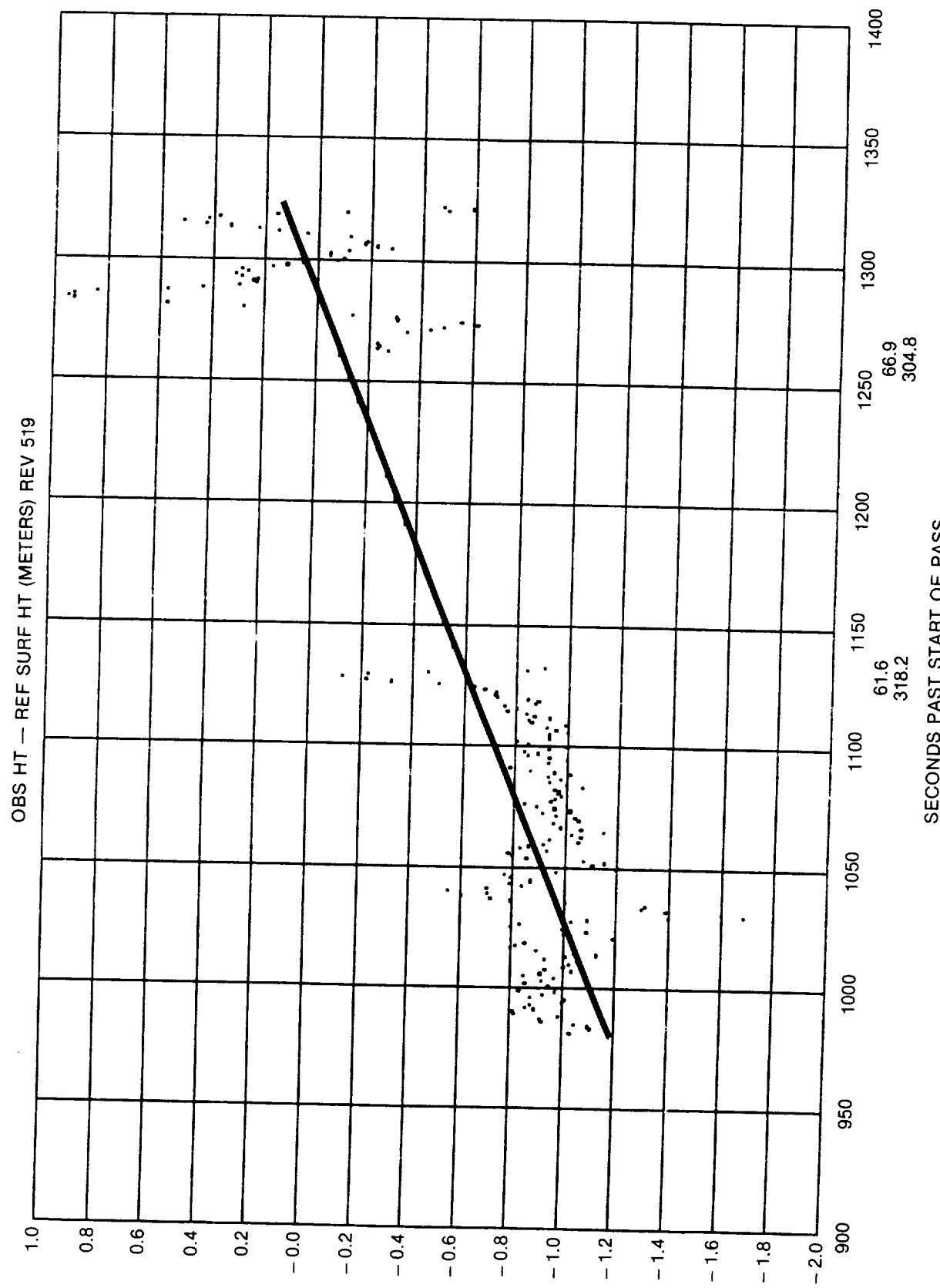


Figure 8. Orbit Adjustment Computed From Data in Close Proximity to Greenland's Coast

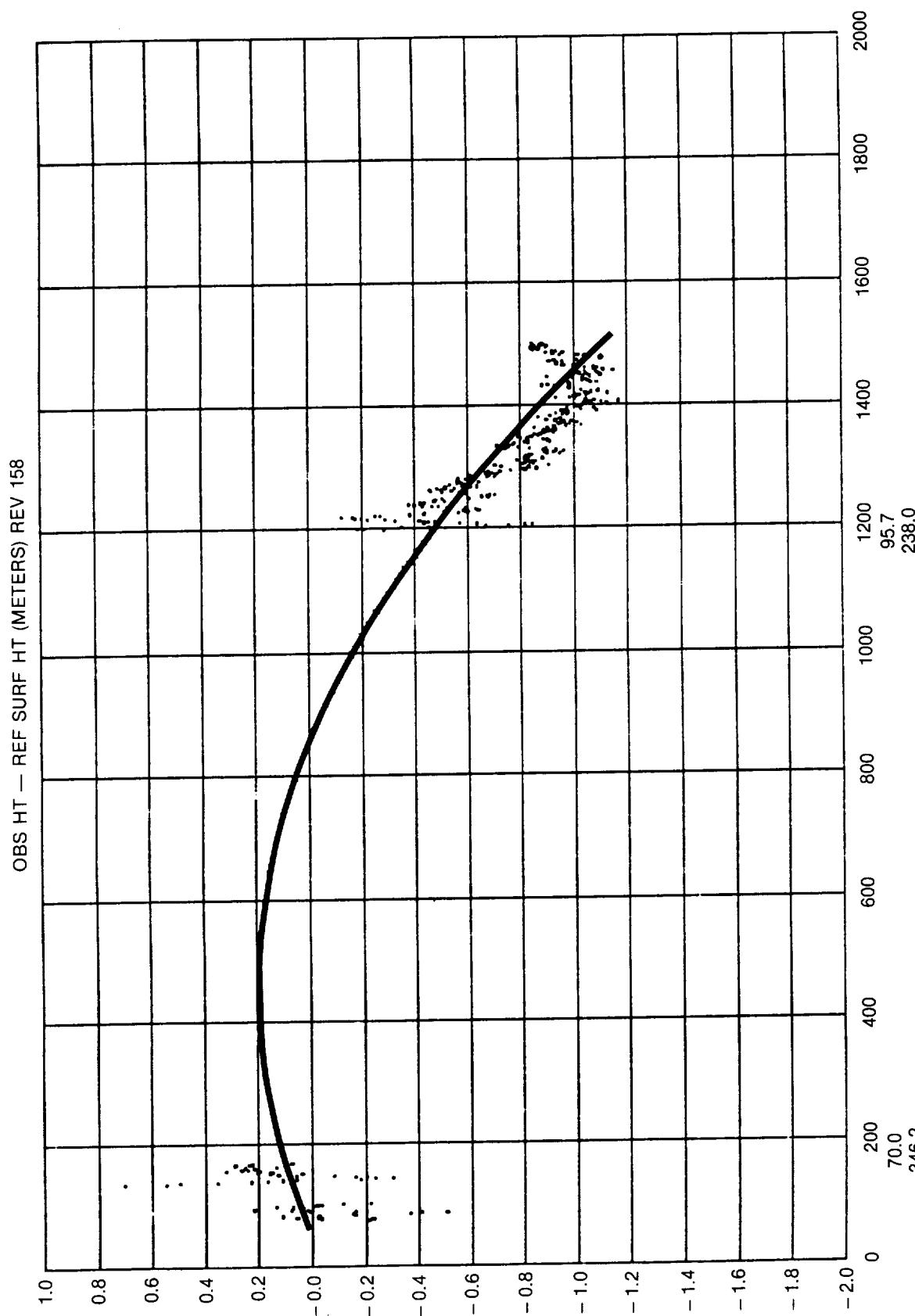


Figure 9. Orbit Adjustment Computed From Widely Distributed Data

Application of the orbit adjustment to the data yields improved crossover results. When the differences in heights are computed at 1235 crossover locations for ascending and descending passes over Greenland, the resultant crossover residual mean of the data without the orbit adjustment is 33 cm with an rms of 1.15 m. After application of the orbit adjustment, the data give a crossover residual mean of 7 cm and an rms of 0.99 m.

2.6 SLOPE CORRECTION

The altimeter height is measured to the closest point within its footprint, which does not correspond to the subsatellite location for sloping surfaces. This effect introduces an error into the height measurement which can be corrected by adjusting either the value of the measurement or its location (Brenner et al., 1983). Upon examination of both techniques, the method which was chosen for the Seasat data is to adjust the measurement. The magnitude of the slope-induced error may be represented by:

$$\Delta H_{\text{SLOPE}} = H(1 - \cos \alpha) \quad (2.54)$$

where

H is the satellite altitude in meters

α is the maximum regional surface slope in radians

or

$$\Delta H_{\text{SLOPE}} = \frac{H\alpha^2}{2}, \text{ for small } \alpha. \quad (2.55)$$

The surface slope in Equation (2.55) for any one point is calculated using the following equation:

$$\alpha = \sqrt{\alpha_{\text{along-track}}^2 + \alpha_{\text{cross-track}}^2} \quad (2.56)$$

where

$\alpha_{\text{along-track}}$ is the slope of the surface in the along-track direction of the data, and

$\alpha_{\text{cross-track}}$ is the slope of the surface in the cross-track direction of the data, perpendicular to the along-track direction.

The cross-track slope is obtained by using a reference surface of Greenland, generated from the Seasat data. This surface consists of a two-dimensional grid of heights. The spacing between grid points is 20 km. Bilinear interpolation between these grid values is used to determine the heights at the points where the cross-track intersects the closest grid lines. From these heights, the cross-track slope is then determined.

The along-track slope is obtained using the available along-track data. Since the height profile is initially unknown, an iterative procedure is used to attempt a reconstruction of the true height profile. The initial along-track slope at a data point location is calculated by performing a linear fit to the five elevations of the along-track data points nearest the data point in question. A slope correction is then calculated for that point and each point in the pass using Equation (2.55), but applying only 25% of the correction to the elevations. This entire procedure is repeated using the revised elevations three more times, each time applying 25% of the current elevation correction. After the final iteration, the total along-track height correction and Equation (2.55) are used to calculate an "effective" along-track slope. This slope may then be used in Equation (2.56) along with the cross-track slope to calculate the total slope. In the case of both the along and cross-track slopes, a maximum of .8 degree is allowed. This is a limitation set by the physical characteristics of the altimeter.

If two points cannot be found on both sides of the point being adjusted, after having searched 10 km in both directions, then the reference grid which is used to calculate the cross-track slope is also used to determine the along-track slope in a manner equivalent to the cross-track slope calculation described above.

Slope corrections are not applied to the surface heights on the IDR's. However, the along-track and cross-track slopes, from which the slope correction may be computed, are stored in bytes 85-86 and 87-88, respectively. Bytes 89-90 contain the size of the window required to find the five points to perform the along-track linear fit. Bytes 91-92 give information pertaining to how the along-track and cross-track slopes were determined.

2.7 SUMMARY OF CORRECTIONS

In order to obtain a corrected surface elevation relative to sea level with the solid tide effects removed, the following algorithm is used.

$$\begin{aligned} H_{\text{COR}} = H_{\text{SC}} - H_{\text{ALT}} - \Delta H_{\text{RET}} - \Delta H_{\text{CG}} + \Delta H_{\text{ION}} + \Delta H_{\text{TROP}} - \Delta H_{\text{TIDE}} \\ - \Delta H_{\text{ORB}} - \Delta H_{\text{SLOPE}} - H_{\text{GEOID}} \end{aligned} \quad (2.57)$$

where

H_{SC} is the height of the spacecraft above the ellipsoid,

H_{ALT} is the original altimeter measurement,

ΔH_{RET} is the retracking correction,

ΔH_{CG} is the center of gravity correction,

ΔH_{ION} is the ionospheric correction,

ΔH_{TROP} is the tropospheric correction,

ΔH_{TIDE} is the value of solid tide,

ΔH_{ORB} is the orbit adjustment,

ΔH_{SLOPE} is the slope correction, and

H_{GEOID} is the value of the geoid.

The surface elevation on the IDR is relative to the ellipsoid and is corrected for tropospheric and ionospheric effects, the center of gravity offset, the retracking correction, and the orbit adjustment when available. However, the elevation still contains solid tide effects, and the application of the slope correction or removal of the solid tides have been left to the discretion of the user. The surface elevation status word located in bytes 77-78 of the IDR should be checked to verify whether or not corrections have been applied.

Corrections which are applied to the altimeter measurement are done in the opposite sense from the surface elevation corrections and may be verified using the altimeter measurement status word in bytes 13-16 of the IDR.

An outline of the adjustments and corrections required to the Seasat data and their values or range of values is given in Table 4.



SECTION 3.0
WAVEFORM DATA RECORDS

The averaged radar return pulses contained in the SDR's are stored on a separate file called the Waveform Data Records (WDRs) to facilitate their use. Table 5 outlines in detail the format of this record.

The time, geographical position, and altimeter measurement on the WDRs are not identical to the corresponding records on the IDRs. This is due to the fact that the WDRs information is obtained directly from the SDR's without the application of any correction or adjustment of any kind. The time differs by the time tag correction described in Section 2.2.1. Positions on the WDR are from the orbits on the SDR's and not PGS-S4 orbits. The altimeter measurement represents the raw observation on the SDR without any of the corrections described in Section 2.7 applied.



SECTION 4.0
GEO-REFERENCED DATA BASE

Ordering the Seasat data merely by time presents certain limitations when only data in a particular locale are desired. This situation arises when data are used to generate a grid of smoothed surface heights. To circumvent this problem, a data base was developed which orders the Seasat data by geographical areas or "bins". Figure 10 shows the configuration of the 4,300 bins in the vicinity of Greenland. Bin sizes vary in order to compensate for the higher data density near Seasat's maximum latitude. Each bin is assigned a number starting with "1" in the southwestern-most corner. Bin numbers increment first from west to east and then from south to north. The ending bin number for each row is indicated in the right-most margin of the map in Figure 10, while the number of data points is printed within the appropriate bin. Bins which contain no data have no number entered. Table 6 summarizes the number of points and the rev numbers found in each bin, along with the geographical coordinates of the southwestern-most corner of the bin. The bin number in which a particular data point is located may be found in bytes 153-156 of the IDR.

The geo-referenced data base is a subset of the IDR's, containing only information relating to the position, rev number, surface height, slope correction and orbit adjustment for each data point. Slope correction and orbit adjustment values are flagged with a -9999, if unavailable. In addition, the data are ordered first by bin number and then by time within each bin. The surface elevations on this data set have the orbit adjustment applied where it was available. If the orbit adjustment was not available, (indicated by the orbit adjustment value for that record being set to -9999) then the surface elevation contains the value calculated from the unadjusted orbit. The slope correction has not been applied to any of the surface elevations.

The data base is designed to be used on a direct-access device, so that data from one or several bins may be accessed without the need to read all the records prior to the location desired. This is achieved by dividing the data base into three sections.

The first section of the data base, a header, consists of one logical record and gives a summary of its configuration: the locations of the corners of the data base, the number of latitudinal rows, the width in degrees of each of these rows, and the number of longitudinal divisions in each row. These pieces of information give the layout of the data base, as depicted in Figure 10. Information pertaining to the size of the data base, the starting record of the bin directory, and the corrections applied to the data are also contained in this header.

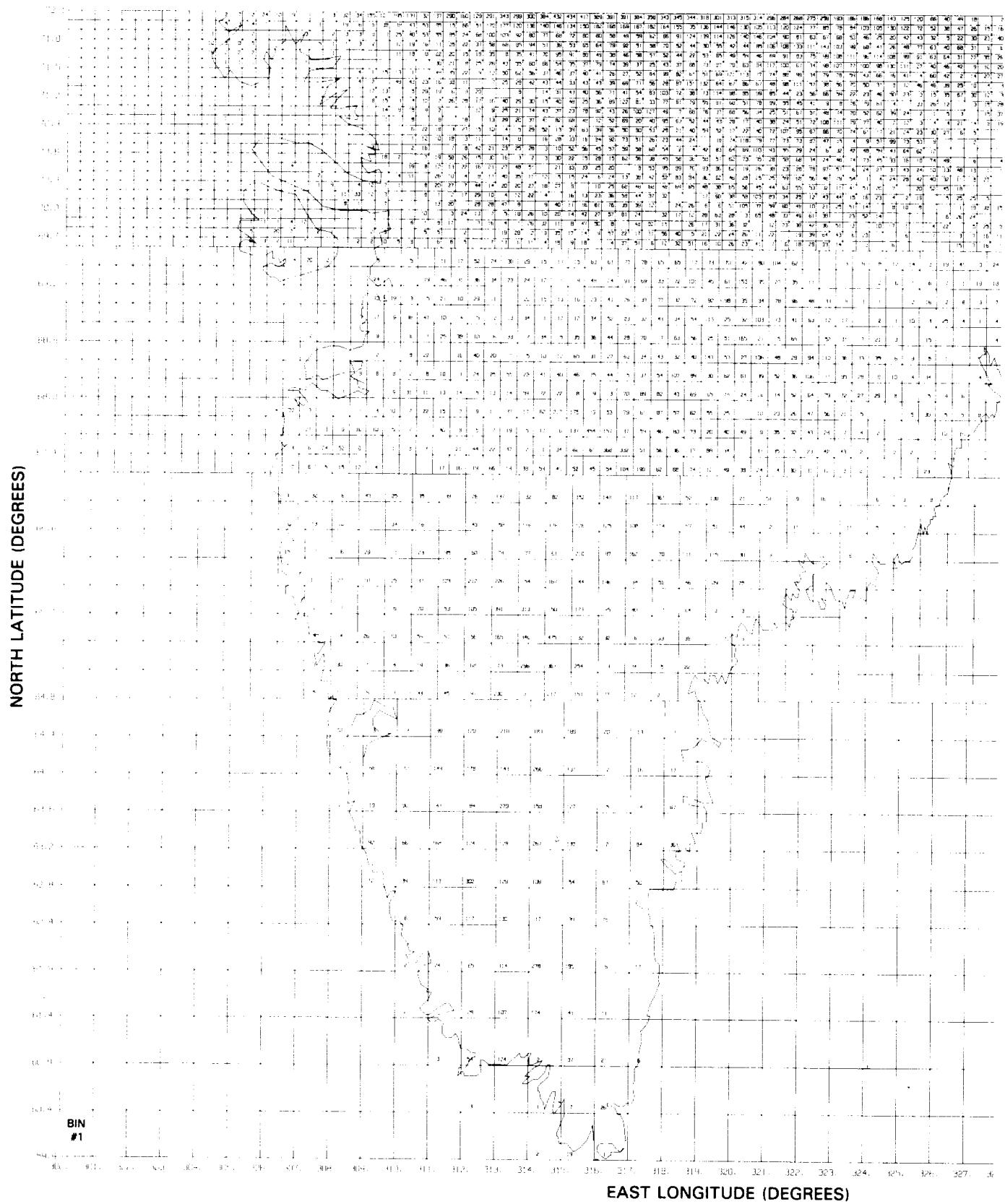
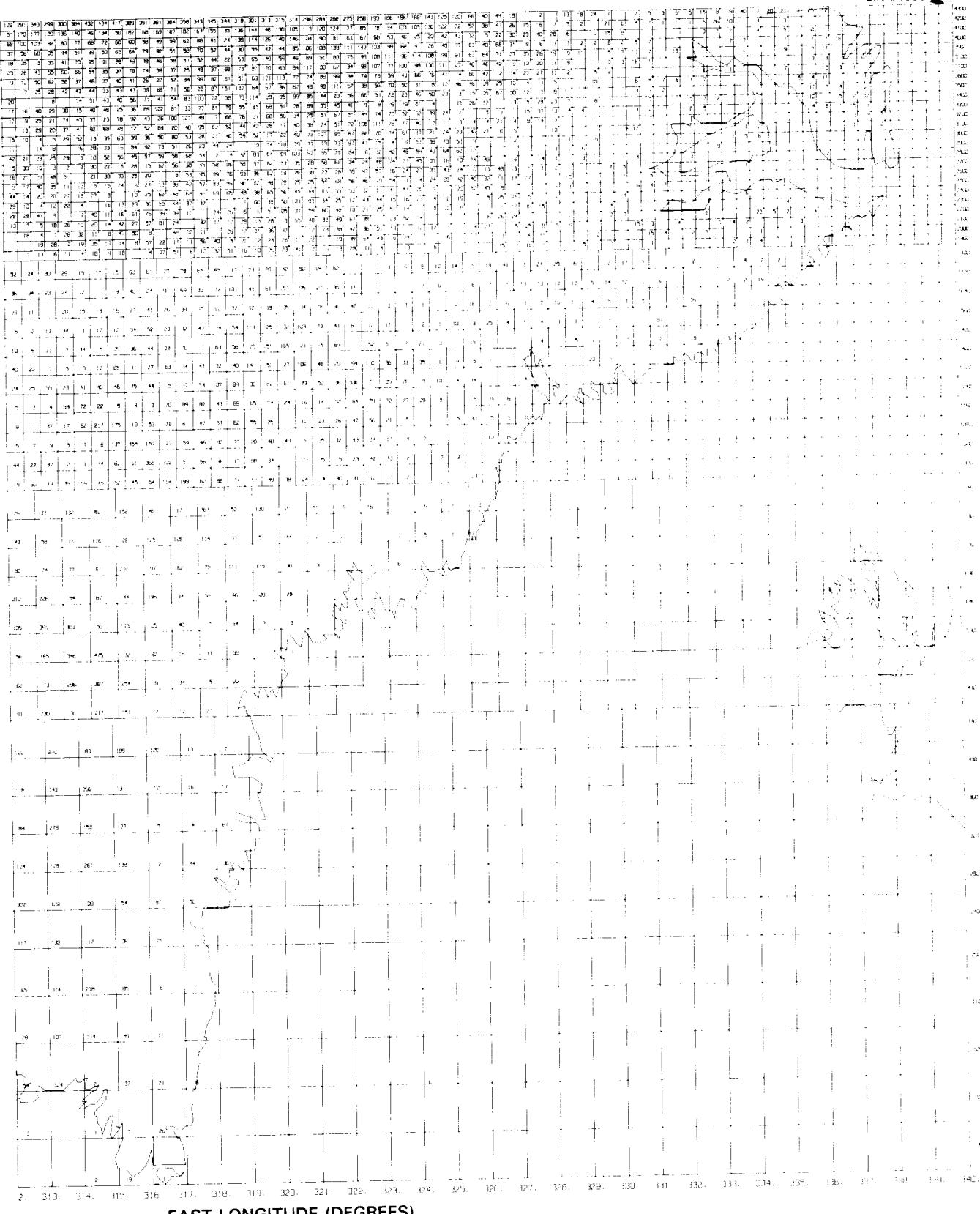


Figure 10. Seasat Greenland Geo-referenced Data Base Configuration

BIN #4300

BIN NUMBER



EAST LONGITUDE (DEGREES)

Following the header are the altimetry data ordered by bin number and, within each bin, by time. The altimetry data are subdivided into two groups for each bin which contains data. The first subgroup consists of one logical record which indicates the number of data points contained in the bin. The second subgroup consists of the actual altimetry data (position, rev number, surface height, orbit adjustment and slope correction), with each record corresponding to a data point.

The final section is a bin directory which follows the altimetry data. The bin directory starts at the logical record indicated in the data base header. The directory contains an entry for each bin, and starting with the first bin, indicates the record number in the data base (not including the header record) at which the start of the data for a particular bin may be found. Bins which contain no data have a zero entered in the directory. Table 7 summarizes the structure of the data base in greater detail.

One use of the data base is to assist the gridding program (Section 5.0) in locating and accessing all data contained within a specified radius of a grid location. In addition, the data base may be used to locate data within any desired area. The following example demonstrates how this may be done. The limits of a desired area are used in conjunction with the header information to determine exactly which bin numbers contain the data. Using the southernmost latitude of the desired area, along with the width of the latitude rows, establishes the southernmost row which contains the data. Longitudinal limits of the desired area are then checked in conjunction with the size and location of the longitudinal divisions in that row. When the longitude limit of the desired area for that latitudinal group is exceeded, the process starts again with the next latitude row to the north. These steps are repeated until the northernmost boundary limit of the desired area is reached.

Equipped with the bin numbers which contain the data, the directory, which gives the logical record on the direct-access disk at which each bin begins, is read. If the directory value for the bin is non-zero, this logical record is then read to determine the number of records which follow and are contained in the same bin. The subsequent data is then read for each bin.

SECTION 5.0

GRIDS

The uneven distribution of Seasat data presents problems when attempting to create computer generated contours. An intermediate step is useful which fits the data to nodes of a regular grid. Data local to each grid point are fit with a biquadratic or bilinear surface to determine the surface height at the grid point. This procedure is referred to as gridding the data. Grids are generated using the corrected and adjusted data in the geographical data base.

5.1 POLAR STEREOGRAPHIC PROJECTION

Grids of the Greenland data are generated in a tangent polar stereographic projection where the plane of projection is located at the geographic North Pole (the projection latitude) and is normal to the earth's axis. This projection is conformal which results in equality of scale about a point. Figure 11a depicts the concept behind this type of projection. A straight line is drawn from the South Pole (pole of projection), through a point on the earth's surface, Q, to the projection plane which is tangent to the North Pole. The projection plane is in turn divided into square grids from the pole to the Equator with the North Pole at the center. Three projection parameters define the size and the orientation of the plane and the grid size:

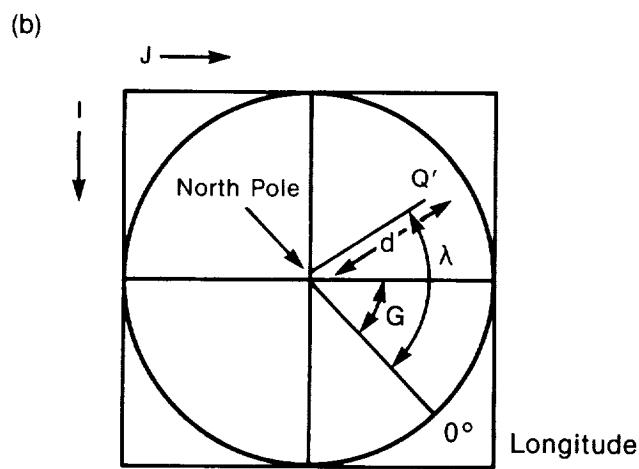
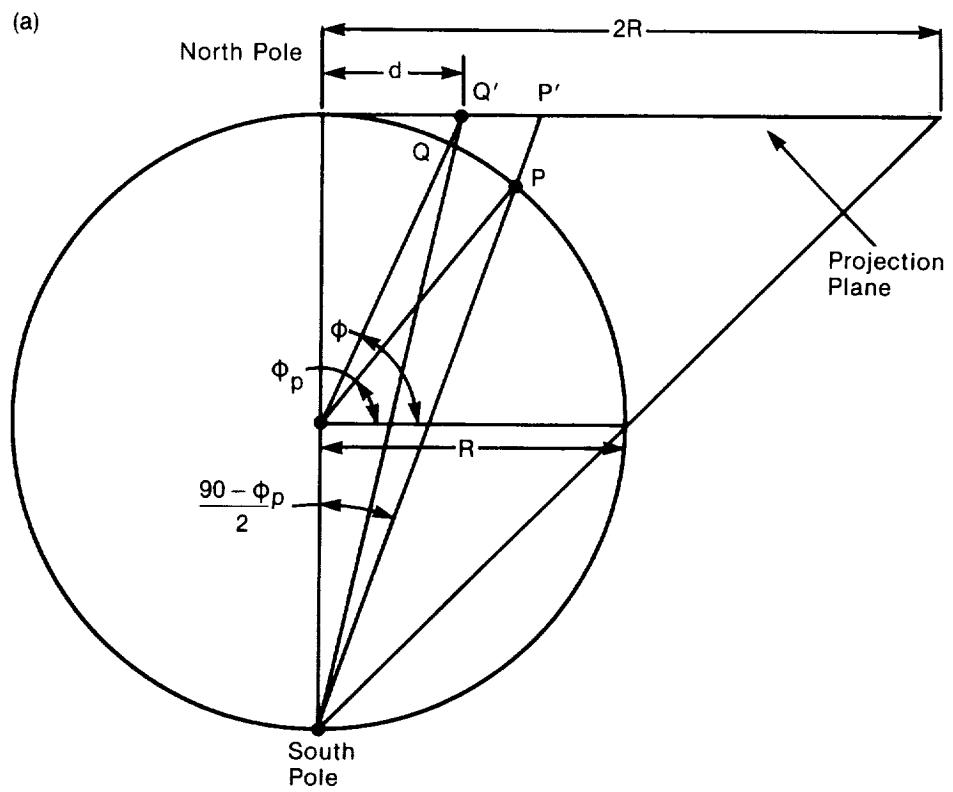
S - a conversion factor from half-inch grids at the projection latitude to the desired grid size;

ϕ_p - the minimum latitude extent of the map perimeter for the projection latitude located at the North Pole; maximum latitude extent for the projection latitude located at the South Pole;

G - the Greenwich orientation in degrees

In the case of Greenland, where 20 kilometer grid cells were decided as being optimum for the data distribution, values of $S=1.65$, $\phi_p = 50^\circ$, and $G=45^\circ$ were chosen.

These three parameters are sufficient to define a grid of the northern hemisphere, from the North Pole to 50° north latitude where the number of cells of desired size from the pole to the equator may be represented by:



Figures 11a and 11b. Polar Stereographic Projection of Point Q with Latitude ϕ and Longitude λ onto Plane with Map Perimeter 50°

$$D = \frac{2R}{S \times 10^6} . \quad (5.1)$$

where R is the radius of the earth measured in one half-inch grid cells and was chosen to be consistent with polar stereographic projections described in other documentation.

The integer number of grids of desired size from the pole to the map perimeter is:

$$N = D \times \tan \frac{90 - |\phi_p|}{2} . \quad (5.2)$$

The grid, defined by I and J axes, with the origin in the upper left corner (see Figure 11b), represents the coordinate of the North Pole as:

$$\begin{aligned} I_p &= N + 1 \\ J_p &= N + 1 . \end{aligned} \quad (5.3)$$

Any point with latitude ϕ and longitude λ , which is located in the northern hemisphere north of ϕ_p is positioned at the following I, J coordinate:

$$\begin{aligned} I &= \text{INT} [d \times A \times \cos(X) + I_p + 0.5] \\ J &= \text{INT} [d \times \sin(X) + J_p + 0.5] \end{aligned} \quad (5.4)$$

where

$$d \text{ is } D \times \tan \frac{90 - |\phi_p|}{2}$$

$$X \text{ is } \lambda + G$$

$$A \text{ is } +1 \text{ if } \phi_p \geq 0$$

$$A \text{ is } -1 \text{ if } \phi_p < 0 .$$

5.2 GRIDDING PROCEDURE

The surface height at each grid point location is calculated by fitting the surrounding data to the following biquadratic surface modeling function:

$$\begin{aligned}
 h_{ij}(\lambda, \phi) = & C_{1ij} + C_{2ij} \frac{(\lambda - \lambda_i)}{\text{capmin}} + C_{3ij} \frac{(\phi - \phi_j)}{(\text{capmin})(\cos\phi_j)} \\
 & + C_{4ij} \frac{(\lambda - \lambda_i)}{(\text{capmin})} \frac{(\phi - \phi_j)}{(\text{capmin})(\cos\phi_j)} + C_{5ij} \frac{(\lambda - \lambda_i)^2}{\text{capmin}^2} \\
 & + C_{6ij} \frac{(\phi - \phi_j)^2}{(\cos^2\phi_j)(\text{capmin}^2)}
 \end{aligned} \tag{5.5}$$

where

h_{ij} = value of the surface elevation function for the ij grid point as evaluated at the location (λ, ϕ) ;

$C_{1ij} - C_{6ij}$ = numerically determined coefficients of the biquadratic function for grid point ij ; and

$\lambda_i \phi_j$ = longitude and latitude of the ij grid point in deg.

capmin = minimum cap size in deg longitude.

A weighted least-squares method is used to solve for the coefficients $C_{1ij} - C_{6ij}$ at each grid point ij . The weighting is invoked to prevent the obliteration of the local surface details by the smoothing process, and to lend greater importance to the data closest to the grid point location. The form of the weighting function is

$$W_{kj} = \frac{1}{\sigma_{ok}^2 D_{kj}^N} \tag{5.6}$$

where

W_{kj} = weight of the k^{th} data point used in determining the coefficients of the surface function for the ij grid location;

σ_{ok} = observation standard deviation of the k^{th} data point;

N = power of inverse distance weighting; and

D_{kj} = the distance from the k^{th} data point to location ij ,

$$\text{where } D_{kij} = \{[(\lambda_k - \lambda_i) \cos \phi_k]^2 + (\phi_k - \phi_i)^2\}^{1/2}$$

The observation standard deviation was assigned a value of 1.0 m. The power of inverse distance weighting was assigned a value of 2.0 m. The formula used for the least-squares minimization in matrix notation is

$$P_{ij}^T W_{ij} P_{ij} C_{ij} = P_{ij}^T W_{ij} H_{ij} \quad (5.7)$$

or

$$C_{ij} = [P_{ij}^T W_{ij} P_{ij}]^{-1} P_{ij}^T W_{ij} H_{ij} \quad (5.8)$$

where

$$H_{ij} = \begin{bmatrix} h_1 \\ \vdots \\ h_k \\ \vdots \\ h_m \end{bmatrix}$$

is the observational data set used in determination of grid point ij;

$$P_{ij} = \begin{bmatrix} \frac{\partial h_1}{\partial C_{1ij}} & \frac{\partial h_1}{\partial C_{2ij}} & \dots & \dots & \frac{\partial h_1}{\partial C_{6ij}} \\ \vdots & \vdots & & & \vdots \\ 2h_m & \dots & \dots & \dots & \frac{\partial h_m}{\partial C_{6ij}} \\ \frac{\partial h_m}{\partial C_{1ij}} & & & & \end{bmatrix}$$

is the matrix of observational partial derivatives;

$$C_{ij} = \begin{bmatrix} C_{1ij} \\ \vdots \\ C_{6ij} \end{bmatrix}$$

is the set of coefficients for grid point;

$$W_{ij} = \begin{bmatrix} W_{1ij} & & & 0 \\ & \ddots & & \\ & & \ddots & \\ 0 & & & W_{mij} \end{bmatrix}$$

is the observation weighting matrix.

A solution exists for Equation (5.8) if the determinant of the normal matrix $B_{ij} = P_{ij}^T W_{ij} C_{ij}$ is positive. However, poor data distribution can cause ill-conditioned matrices yielding solutions that vary considerably from the expected results. One needs to be able to recognize when numerical problems occur to assure reasonable solutions. To this end the singular value decomposition (SVD) method is used to solve the matrix equation. The results of the SVD process give an indication of the stability of the equations and therefore whether a unique stable solution exists (Forsythe, Malcolm, and Moler, 1977). When the normal matrix B_{ij} is used as input to SVD, three output matrices are calculated: Σ , U , and V . Σ is a diagonal matrix, such that

$$\Sigma = \begin{bmatrix} \sigma_1 & & 0 \\ & \ddots & \\ 0 & & \sigma_6 \end{bmatrix}$$

where the σ 's are referred to as the singular values of B . The matrices U and V are used to transform the equations

$$Bc = y$$

into an equivalent diagonal set of equations

$$\Sigma \bar{c} = \bar{y} .$$

In principle, if none of the σ 's are zero the transformed equations could be solved using

$$\bar{c}_1 = \frac{\bar{y}_1}{\sigma_1} .$$

In practice, when any of the σ 's are small, numerical instability can result, giving unreasonable answers. The key to using SVD is to set a tolerance τ which reflects the accuracy of the data and the arithmetic used. If any σ 's are less than τ times the largest σ then those corresponding

\bar{c} 's are not uniquely defined and unreasonable results can occur. When problems occur, steps must be taken to provide more information to evaluate the surface function.

Once τ is chosen, then Σ , U , and V are used in the following manner to calculate each coefficient C_l .

$$S = \sum_{j=1}^m U(j,i) Y_j$$

for all j where $\sigma_j > \tau$

$$C_l = \sum_{k=1}^n \frac{S}{\sigma_k} V(i,k) .$$

In this study the value of τ used was .001 m. SVD is then used to determine when there are sufficient data to provide a unique solution to the surface modeling function. When a unique solution cannot be found more data are added and the function is reevaluated. At each grid location ij , data within the circular area defined by radius R from the grid location are used in the solution. Four different values for R are used: 33 km, 55 km, 88 km, and 132 km. Initially the smallest value of R is used and if a solution cannot be found then R is increased. If the biquadratic solution at the maximum value of R is unsatisfactory according to the SVD criterion, then the function (Equation 5.5) is reduced to a bilinear function by setting coefficients C_4 through C_6 to zero. If a valid solution still cannot be found, then the grid value is considered undefined and set to -1000.0.

Individual data point removal is also invoked during the gridding process. After finding a valid solution at location ij , the weighted rms of the residuals of the data with respect to the surface is calculated using

$$RMS_{WT_{ij}} = \frac{\sum_{k=1}^M \frac{Res_{kij}^2}{\sigma_{ok}^2 D_{kj}}}{\sum_{k=1}^M \frac{1}{\sigma_{ok}^2 D_{kj}}}^{1/2} \quad (5.9)$$

where

$$Res_{kij} = h_k - h_{kij}$$

h_{kij} = height at location of measurement k evaluated using the surface function for grid location ij .

The following inequality is then evaluated for each data point used in the solution.

$$\frac{Res_{kij}}{\sigma_{ok}^N D} \leq E_{mult} * RMS_{WT_{ij}} \quad (5.10)$$

A value of the editing multiplier (E_{mult}) equal to 3.5 is used and all data points that do not satisfy the inequality are deleted. When any data points are deleted the surface function is reevaluated using the remaining data. A minimum of 10 data points are required to solve for the function.

The standard deviation associated with the grid height, σ_{Gij} , is then calculated to determine how well the grid represents the data.

$$\sigma_{Gij} = RMS_{WT_{ij}} * (V_{11ij})^{1/2}$$

where

$$V_{ij} = B_{ij}^{-1} P_{ij} W_{ij} \begin{bmatrix} \sigma_{o1}^2 & & & & & 0 \\ & \ddots & & & & \\ & & \ddots & & & \\ & & & \ddots & & \\ & & & & \sigma_{om}^2 & \\ 0 & & & & & \end{bmatrix} [B_{ij}^{-1} P_{ij}^T W_{ij}]$$

Grid points that have a large value of σ_G do not represent the data as well as those that have smaller σ_G 's.

The format of the grid record is described in Table 8. The location, coefficients, σ_G , number of points used and other pertinent parameters are output for each grid point location. The user can utilize these parameters to decide the accuracy of the individual grid values.

TABLES

Table 1. Ice Data Record Description

General Characteristics:

Record Format - variable
 Record Size (bytes) - 164 + 4 for IBM record control word
 Blocksize (bytes) - 31920 + 4 for IBM block control word

The first seven records of the IDR data set are 80 bytes long and contain a brief description of the contents of the file. The remaining records follow the 164-byte format.

HEADER RECORDS

<u>Bytes</u>	<u>FORTRAN Variable</u>	<u>Type</u>	<u>Description</u>
1-80		A1	Brief description of file contents. (Comprises first seven records only)

DATA RECORDS

<u>Bytes</u>	<u>FORTRAN Variable</u>	<u>Type</u>	<u>Description</u>
1-4		I*4	<p>Satellite ID - This is the international satellite designation nnpppqq where:</p> <p>nn - last two digits of the year of launch (e.g., 1974 74, 1969 69).</p> <p>ppp - order of launch.</p> <p>Example: The 25th vehicle launch in a given year is designated with ppp = 025.</p> <p>qq - component identifier (e.g., component a → 01, component ℓ → 12, etc.).</p>
5-6		I*2	<p>Measurement type</p> <p>40-44 Altimeter height</p> <p>40 = Long pulse (GEOS data) 41 = Short pulse (GEOS data) 43 = Seasat altimetry</p>

Table 1. Ice Data Record Description (Cont.)

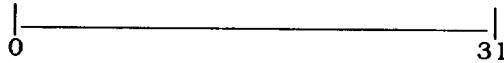
Bytes	FORTRAN Variable <u>Type</u>	Description																																				
7-8	I*2	Time system indicator (nm)																																				
		<table> <thead> <tr> <th><u>n-value</u></th> <th><u>Description</u></th> <th><u>Tracking data times</u></th> </tr> </thead> <tbody> <tr> <td>0</td><td></td><td>Ground received time</td></tr> <tr> <td>1</td><td></td><td>Satellite transponder/reflector time</td></tr> <tr> <td>2</td><td></td><td>Ground transmitted time</td></tr> </tbody> </table> <table> <thead> <tr> <th><u>1</u></th> <th><u>Altimeter data times</u></th> </tr> </thead> <tbody> <tr> <td>1</td><td>Transmitter time</td></tr> <tr> <td>2</td><td>Ground bounce time</td></tr> <tr> <td>3</td><td>Receiver time</td></tr> </tbody> </table> <table> <thead> <tr> <th><u>m-value</u></th> <th><u>Description</u></th> </tr> </thead> <tbody> <tr> <td>0</td><td>UT-0</td></tr> <tr> <td>1</td><td>UT-1</td></tr> <tr> <td>2</td><td>UT-2</td></tr> <tr> <td>3</td><td>UTC</td></tr> <tr> <td>4</td><td>A.1</td></tr> <tr> <td>5</td><td>A.3 (A.T. B.I.H.)</td></tr> <tr> <td>6</td><td>A-S (Smithsonian)</td></tr> </tbody> </table>	<u>n-value</u>	<u>Description</u>	<u>Tracking data times</u>	0		Ground received time	1		Satellite transponder/reflector time	2		Ground transmitted time	<u>1</u>	<u>Altimeter data times</u>	1	Transmitter time	2	Ground bounce time	3	Receiver time	<u>m-value</u>	<u>Description</u>	0	UT-0	1	UT-1	2	UT-2	3	UTC	4	A.1	5	A.3 (A.T. B.I.H.)	6	A-S (Smithsonian)
<u>n-value</u>	<u>Description</u>	<u>Tracking data times</u>																																				
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1	UT-1																																					
2	UT-2																																					
3	UTC																																					
4	A.1																																					
5	A.3 (A.T. B.I.H.)																																					
6	A-S (Smithsonian)																																					
9-12	I*4	Station Number (0 indicates altimeter)																																				
13-16	I*4	Altimeter measurement status word																																				
		<p>The status word consists of bit switches packed into a single 32-bit word. The rightmost bit (bit 31) is of lowest order and the leftmost bit (bit 0) is of highest order.</p>  <p>The status bits are configured as follows:</p> <table> <thead> <tr> <th><u>Bits</u></th> <th><u>Value</u></th> <th><u>Description</u></th> </tr> </thead> <tbody> <tr> <td>0</td> <td></td> <td>Unused</td> </tr> <tr> <td>1-2</td> <td></td> <td>Format indicator for measurement types 40-41</td> </tr> <tr> <td></td> <td>1</td> <td>20 obs/frame</td> </tr> <tr> <td></td> <td>2</td> <td>32 obs/frame</td> </tr> <tr> <td></td> <td>3</td> <td>320 obs/frame</td> </tr> </tbody> </table>	<u>Bits</u>	<u>Value</u>	<u>Description</u>	0		Unused	1-2		Format indicator for measurement types 40-41		1	20 obs/frame		2	32 obs/frame		3	320 obs/frame																		
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Table 1. Ice Data Record Description (Cont.)

<u>Bytes</u>	<u>FORTRAN Variable</u>	<u>Type</u>	<u>Description</u>
(13-16 Cont.)		<u>Bits</u>	<u>Value</u>
			<u>Description</u>
	3		Net instrument corrections indicator
		0	Instrument corrections applied to observation
		1	Instrument corrections not applied
	4		Unused
	5-6		Speed of light indicator
		0	2.997925×10^8 meters/sec
		3	2.99792458×10^8 meters/sec
	7		Unused
	8		Solid tide indicator
		0	Solid tide not on data record
		1	Solid tide on data record
	9		Ocean tide indicator
		0	Ocean tides not included in total tides
		1	Ocean tides included in total tides
	10-11		Tropospheric correction indicator
		0	Total tropospheric correction not on data record
		1	Total tropospheric correction on data record
	12		Ionospheric correction indicator
		0	Ionospheric correction not on data record
		1	Ionospheric correction on data record
	13		Atmospheric corrections indicator
		0	Ionospheric and tropospheric corrections applied to observation if found on data record
		1	Ionospheric and tropospheric corrections not applied to observation if found on data record

Table 1. Ice Data Record Description (Cont.)

<u>Bytes</u>	<u>FORTRAN Variable Type</u>	<u>Description</u>	
(13-16 Cont.)	<u>Bits</u>	<u>Value</u>	<u>Description</u>
	14	0	Total tide indicator Solid and ocean tides removed from observation if found on data record
		1	Observation includes solid and ocean tides
	15	0	Center of gravity indicator Center of gravity correction applied to observation
		1	Center of gravity correction not applied to observation
	16-20		Unused
	21	0	Altimeter mode (GEOS only) Global track mode
		1	Intensive track mode
	22-27		Unused
	28	0	Location indicator Over water
		1	Over land
	29	0	Orbit adjustment indicator Orbit adjustment has been applied to observation
		1	Orbit adjustment has not been applied to observation
	30	0	Slope correction indicator Slope correction has been applied to observation
		1	Slope correction has not been applied to observation
	31	0	Retracking correction indicator Retracking correction has been applied to observation
		1	Retracking correction has not been applied to observation

Table 1. Ice Data Record Description (Cont.)

<u>Bytes</u>	<u>FORTRAN Variable</u>	<u>Type</u>	<u>Description</u>
17-20		I*4	Modified Julian Date (MJD) of observation Julian Date = MJD + 2400000.5
21-28		R*8	Fraction of day past midnight (GMT)
29-36		R*8	Altimeter range measurement in meters
37-40		R*4	Satellite latitude in degrees
41-44		R*4	Satellite east longitude in degrees
45-48		R*4	Measurement standard deviation in meters
49-52		R*4	Center of gravity correction in meters
53-56		R*4	Tropospheric refraction correction in meters
57-60		R*4	Ionospheric refraction correction in meters
61-64		R*4	GEM10-B geoid height above reference ellipsoid in meters
65-68		R*4	Total tide height above reference ellipsoid in cm.
69-72		I*4	Rev number
73-76		I*4	Surface height with respect to ellipsoid in cm.
77-78		I*2	Surface height status word



<u>Bits</u>	<u>Value</u>	<u>Description</u>
0-8	0	Unused
9	1	Slope correction applied
	0	Slope correction not applied
10	1	Orbit adjustment applied
	0	Orbit adjustment not applied
11	1	Solid tides removed
	0	Solid tides not removed
12	1	Retracking correction applied
	0	Retracking correction not applied
13	1	Center of gravity bias applied
	0	Center of gravity bias not applied

Table 1. Ice Data Record Description (Cont.)

<u>Bytes</u> (77-78 Cont.)	<u>FORTRAN</u> <u>Variable</u>	<u>Type</u>	<u>Bits</u>	<u>Value</u>	<u>Description</u>
			14	1	Tropospheric correction applied
				0	Tropospheric correction not applied
			15	1	Ionospheric correction applied
				0	Ionospheric correction not applied
79-80	I*2				Significant wave height (H 1/3) in cm.
81-82	I*2				Automatic Gain Control (AGC) in dB
83-84	I*2				Solid tides in cm.
85-86	I*2				Tangent of along-track slope ($\times 10^5$)
87-88	I*2				Tangent of cross-track slope ($\times 10^5$)
89-90	I*2				Size of window used in obtaining along-track slope in meters
91-92	I*2				Along-track and cross-track slope correction word. If all bits are zero, then slopes for slope correction were not able to be computed.
			0	15	
			<u>Bits</u>	<u>Value</u>	<u>Description</u>
			0-9		Unused
			10	1	Along-track slope set to the maximum value of .8 degree during iterative procedure.
			11	1	Cross-track slope set to the maximum value of .8 degree.
			12	1	Along-track slope set to .8 degree after final iteration.
			13	1	Window was extended to 20 km with no point found; reference grid used to calculate along-track slope.
			14	1	Window had to be extended in both directions to determine along-track slope, but it is less than 20 km.
			15	1	Two adjacent points were found and used to determine along-track slope.
93-96	R*4				Orbit adjustment to 84,306 ocean surface in meters
97-100	R*4				RMS of orbit adjustment fit in meters

Table 1. Ice Data Record Description (Cont.)

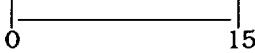
<u>Bytes</u>	<u>FORTRAN Variable</u>	<u>Type</u>	
101-104		R*4	RMS of filtered fit in counts
105-108		R*4	Timing bias in seconds
109-144		R*4	Retracking parameters $\beta(1) - \beta(9)$
145-148		R*4	Attitude information from SDR
149-152		R*4	Correction to surface height if using leading edge of leading edge in meters
153-156		I*4	Geographical data base bin number
157-158		I*2	Standard deviation of 1st leading edge position in gates
159-160		I*2	Standard deviation of 2nd leading edge position in gates
161-162		I*2	Retracking status word
			 A horizontal line with tick marks at 0 and 15, representing the bit range of the status word.
Bits		Value	Description
0			Unused
1	0		Gains and offsets were not applied to waveform counts in plots and in determining β parameters
	1		Gains and offsets were applied to waveform counts in plots and in determining β parameters
2	0		Specular test not performed or waveform not specularly shaped
	1		Waveform determined to be specularly shaped
3	0		Status flag from SDR less than or equal to one
	1		Status flag from SDR greater than one
4	0		Waveform not specularly retracked
	1		Waveform specularly retracked
5	0		Gains and offsets not applied to waveform count values on WDR's
	1		Gains and offsets applied to waveform count values on WDR's

Table 1. Ice Data Record Description (Cont.)

<u>Bytes</u>	<u>FORTRAN Variable</u>	<u>Type</u>	<u>Description</u>		
(161-162 Cont.)			<u>Bits</u>	<u>Value</u>	<u>Description</u>
			6	0	For double waveforms the retracking correction is not calculated from a weighted average of the two leading edges.
				1	For double waveforms the retracking correction is calculated from a weighted average of the two leading edges.
			7	0	No problem with leading edge definition of waveform
				1	Waveform not defined well enough to filter, no leading edges or too many leading edges
			8	0	No problem retracking
				1	Problem retracking
			9	0	Timing bias was not applied to time tag
				1	Timing bias applied to time tag
			10	0	Waveform not retracked
				1	Waveform retracked
			11	0	Whole edge retracked
				1	Leading edge retracked
applies to water data			12	0	Ht correction not applied due to h
				1	Ht correction applied due to h
			13	0	Attitude seastate correction not applied to h
				1	Attitude seastate correction applied to h
			14-15	0	Tracking mode 1
				1	Tracking mode 2
				2	Tracking mode 3
				3	Tracking mode 4
163-164	I*2		Version number of retracking program that converted the data from SDR to IDR format		
			$n_1 n_2 n_3 n_4 n_5$		
			$n_1 n_2$ = year of version		
			$n_3 n_4$ = month of version		
			n_5 = point no. of version		

Table 2. Seasat IDR Greenland Catalog

REV NUMBER	APPROXIMATE LATITUDE AND DIRECTION AT 315.0° E LONG A = ASCENDING D = DESCENDING	STARTING LAT & LONG DEG N DEG E		ENDING LAT & LONG DEG N DEG E		NUMBER OF PTS	BINS THROUGH WHICH REV TRAVERSES
		DEG N	DEG E	DEG N	DEG E		
792	59.56 A	61.039	312.420	61.321	311.908	6	
591	60.07 A	61.334	312.627	62.621	310.127	26	
835	60.74 A	60.759	314.881	63.610	309.222	19	
634	60.92 A	61.109	314.681	63.428	309.850	49	
146	61.04 A	60.894	315.238	64.293	308.216	81	
878	61.38 A	61.149	315.428	64.318	308.803	159	
1437	61.58 A	61.131	315.859	64.741	308.155	99	
1394	61.58 A	60.738	316.552	64.772	308.071	162	
1351	61.58 A	60.754	316.523	64.438	308.905	102	
1308	61.58 A	60.726	316.576	64.298	309.251	130	
1265	61.58 A	60.909	316.260	64.488	308.792	123	
1222	61.58 A	61.490	315.209	64.847	307.891	129	
1179	61.58 A	61.572	315.059	64.861	307.858	164	
677	61.72 A	61.449	315.305	63.756	310.555	71	
189	61.83 A	61.250	316.033	64.853	308.251	100	
720	62.43 A	61.729	316.316	65.540	307.586	214	
476	62.51 A	61.567	316.698	64.534	310.310	59	
232	62.56 A	61.706	316.621	65.296	308.516	172	
519	63.21 A	62.157	317.010	66.307	306.861	180	
275	63.25 A	62.102	317.299	66.349	306.908	207	
763	63.31 A	62.294	317.040	66.390	306.907	307	
562	63.86 A	63.352	315.969	66.789	306.775	428	
806	64.20 A	63.779	315.911	66.818	307.582	408	
605	64.46 A	63.778	316.457	67.114	307.126	321	
849	64.96 A	64.133	316.968	67.531	306.986	309	
648	65.04 A	63.899	317.624	67.562	306.971	403	
160	65.12 A	64.524	316.488	67.708	306.793	330	
1021	65.28 A	64.589	316.824	67.652	307.507	230	

Table 2. Seasat IDR Greenland Catalog (Cont.)

REV NUMBER	APPROXIMATE LATITUDE AND DIRECTION AT 315.0° E LONG	STARTING LAT & LONG DEG N DEG E	ENDING LAT & LONG DEG N DEG E	NUMBER OF PTS	BINS THROUGH WHICH REV TRAVERSES
A = ASCENDING D = DESCENDING					
1494	65.30 A	63.966 318.426	67.806 307.023	293	339 418 417 510 509 559 558 608
1365	65.31 A	64.428 317.304	66.108 312.752	239	607 657 656 656 656 656 658 607
1322	65.31 A	64.443 317.268	67.913 306.593	56	418 617 461 461 461 461 460 607
1279	65.31 A	64.156 317.968	67.950 306.455	342	657 656 656 656 656 656 658 1015
1236	65.31 A	63.924 318.521	67.415 308.475	314	1094 1094 1094 1094 1094 1094 1094 1094
1193	65.31 A	64.839 316.285	67.130 309.482	334	558 608 607 607 607 607 607 607
1150	65.31 A	64.137 318.026	67.877 306.749	325	656 656 656 656 656 656 656 658
691	65.57 A	64.197 318.365	66.927 310.655	195	379 378 378 461 460 460 460 460
490	66.11 A	65.153 317.558	68.035 308.209	218	607 607 607 607 607 607 607 607
289	66.62 A	65.394 318.532	68.103 309.560	357	512 562 562 562 562 562 562 562
777	66.71 A	65.273 319.184	68.765 307.033	388	514 514 514 514 514 514 514 514
576	67.02 A	65.798 318.666	68.257 310.201	310	807 807 807 807 807 807 807 807
820	67.31 A	65.930 319.381	68.278 311.211	130	753 808 808 808 808 808 808 808
619	67.44 A	66.173 319.004	68.769 309.407	293	1102 1181 1180 1180 1180 1180 1180 1180
662	67.83 A	66.462 319.559	69.844 305.255	383	614 663 663 663 663 663 663 663
418	67.86 A	66.138 320.720	69.179 309.041	313	808 869 869 869 869 869 869 869
174	67.88 A	66.471 319.893	69.756 306.135	386	1183 1183 1183 1183 1183 1183 1183 1183
1035	67.88 A	65.752 322.115	69.118 309.620	213	1579 1579 1579 1579 1579 1579 1579 1579
1465	67.89 A	66.637 319.493	69.824 305.889	210	1033 1033 1033 1033 1033 1033 1033 1033
1422	67.89 A	66.298 320.552	67.962 314.775	199	1346 1346 1346 1346 1346 1346 1346 1346

Table 2. Seasat IDR Greenland Catalog (Cont.)

REV NUMBER	APPROXIMATE LATITUDE AND DIRECTION AT 315.0° E LONG	STARTING LAT & LONG DEG N DEG E	ENDING LAT & LONG DEG N DEG E	NUMBER OF PTS	BINS THROUGH WHICH REV TRAVERSES	
					A = ASCENDING	D = DESCENDING
1379	67.89 A	66.303 320.531	69.921 305.291	290	716 954 1033 2114 2015	764 874 953 1033 1032
1336	67.89 A	66.571 319.694	69.857 305.678	174	1111 1818 1817 2117	1916 2016 2015 1032
1293	67.89 A	66.630 319.510	67.968 314.754	207	765 813 1031 1111	876 875 874 954 1033
1250	67.89 A	66.467 320.033	68.876 310.856	286	716 1033 1032 1111	765 813 876 875 1032
1207	67.89 A	66.610 319.585	69.156 309.501	148	1188 1189 1268 1267	813 813 1346 1346
1164	67.89 A	66.286 320.600	69.797 306.043	298	1032 1031 1111 1111	1032 1033 1032 1033
461	68.22 A	67.038 319.283	69.852 306.813	294	1345 1424 1423 1502	878 877 957 1035 1033
504	68.56 A	67.116 320.465	69.756 308.832	217	1113 1112 1192 1191	1112 1191 1190 1269
260	68.59 A	66.962 321.170	69.710 309.271	430	1426 1659 1919 2018	1659 1659 1659 1659
567	68.88 A	66.575 323.708	69.651 310.884	403	1192 1198 1197 1196	1192 1192 1191 1191
791	69.01 A	66.728 323.910	70.440 306.589	340	1743 1828 1820 1818	1828 1828 1822 1822
590	69.18 A	66.663 324.872	70.198 309.000	404	1277 1276 1356 1823	1276 1276 1355 1923
834	69.40 A	67.415 323.523	70.105 310.825	322	1510 1590 1590 1817	1590 1590 1590 1817
633	69.46 A	67.486 323.492	70.196 310.456	330	1512 1513 1514 1514	1588 1589 1590 1590
877	69.62 A	67.126 325.822	70.388 310.200	233	1127 1126 1126 1127	1048 1048 1048 1048
					1439 1440 1440 1440	1439 1439 1439 1439
					1673 1674 1674 1674	1673 1674 1674 1674
					1834 1835 1835 1835	1834 1835 1835 1835
					2033 2034 2034 2034	2033 2034 2034 2034
					2232 2233 2233 2233	2232 2233 2233 2233
					2429 2429 2429 2429	2429 2429 2429 2429

Table 2. Seasat IDR Greenland Catalog (Cont.)

REV NUMBER	APPROXIMATE LATITUDE AND DIRECTION AT 315.0° E LONG	STARTING LAT & LONG DEG N DEG E	ENDING LAT & LONG DEG N DEG E	NUMBER OF PTS	BINS THROUGH WHICH REV TRAVERSES
A = ASCENDING D = DESCENDING					
1264	69.68 A	67.216 325.925	70.600 309.083	172	892 1049 1127 1206 1284 1675 1674 1754
1221	69.68 A	67.233 325.869	70.582 309.222	269	1753 1752 1839 1838 1937 2035 2135 2233
676	69.72 A	67.995 322.998	70.340 310.924	449	2331 2429 2528 2626 2725 2823 2823
432	69.74 A	67.260 325.913	70.637 308.907	437	892 1441 1520 1519 1518 1598 1597 1674
719	69.96 A	68.113 324.057	70.608 310.514	532	1754 1753 1752 1838 1938 1937 1936 2036
475	69.99 A	68.116 324.121	70.586 310.746	335	2134 2233 2331 2330 2429 2528 2528 2529
231	70.00 A	67.650 326.124	70.598 310.836	560	892 1441 1520 1519 1518 1598 1597 1674
518	70.21 A	67.880 326.512	70.854 310.046	529	1675 1674 1673 1753 1752 1839 1838 1937
274	70.23 A	67.850 326.804	70.870 310.086	482	2045 2143 2241 2340 2435 2534 2534
762	70.25 A	68.057 326.103	70.607 312.344	328	11334 1290 1369 1447 1525 1524 1524 1603
561	70.43 A	68.368 325.978	71.097 309.298	561	1681 1680 1760 1759 1848 1846 1846 1945

Table 2. Seasat IDR Greenland Catalog (Cont.)

REV NUMBER	APPROXIMATE LATITUDE AND DIRECTION AT 315° E LONG A = ASCENDING D = DESCENDING	STARTING LAT & LONG DEG N DEG E	ENDING LAT & LONG DEG N DEG E	NUMBER OF PTS	BINS THROUGH WHICH REV TRAVERSES
805	70.53 A	68.310 327.112	71.604 304.313	447	1295 1852 1851 2246 2344 2737 3227 1951 2050 2838 2837 1633 2053 2153 2447 2448 2742 3035 3328 3328 1685 1851 2443 2835 3226 3324 2445 1612 2152 2547 2546 2741 3134 3134 3427 1689 2152 2546 2840 3134 3233 3233 1684 2050 2442 2934 3032 3812 2444 1684 2250 2251 2545 2840 3233 3231 1764 2055 2250 2250 2645 2938 2937 3037 1763 1853 2148 3130 3128 3130 2640 3228 3228 2147 2247 2540 3128 3128 2643 2743 3036 3329 1762 2054 2349 2348 2643 2937 3037 3330 1762 2053 2348 2643 2743 3036 3329
604	70.62 A	69.792 320.366	70.650 314.611	103	536
848	70.78 A	68.879 326.476	71.336 309.603	574	1295 1852 1851 2246 2344 2737 3227 1951 2050 2838 2837 1633 2053 2153 2447 2448 2742 3035 3328 3328 1685 1851 2443 2835 3226 3324 2445 1612 2152 2547 2546 2741 3134 3134 3427 1689 2152 2546 2840 3134 3233 3233 1684 2050 2442 2934 3032 3812 2444 1684 2250 2251 2545 2840 3233 3231 1764 2055 2250 2250 2645 2938 2937 3037 1763 1853 2148 3130 3128 3130 2640 3228 3228 2147 2247 2540 3128 3128 2643 2743 3036 3329 1762 2054 2349 2348 2643 2743 3037 3330 1762 2053 2348 2643 2743 3036 3329
647	70.80 A	69.386 324.062	71.393 309.039	574	1295 1852 1851 2246 2344 2737 3227 1951 2050 2838 2837 1633 2053 2153 2447 2448 2742 3035 3328 3328 1685 1851 2443 2835 3226 3324 2444 1612 2152 2547 2546 2741 3134 3134 3427 1689 2152 2546 2840 3134 3233 3233 1684 2050 2442 2934 3032 3812 2443 1684 2250 2251 2545 2840 3233 3231 1764 2055 2250 2250 2645 2938 2937 3037 1763 1853 2148 3130 3128 3130 2640 3228 3228 2147 2247 2540 3128 3128 2643 2743 3036 3329 1762 2054 2349 2348 2643 2743 3037 3330 1762 2053 2348 2643 2743 3036 3329
891	70.85 A	68.446 329.146	71.715 305.207	575	1295 1852 1851 2246 2344 2737 3227 1951 2050 2838 2837 1633 2053 2153 2447 2448 2742 3035 3328 3328 1685 1851 2443 2835 3226 3324 2444 1612 2152 2547 2546 2741 3134 3134 3427 1689 2152 2546 2840 3134 3233 3233 1684 2050 2442 2934 3032 3812 2443 1684 2250 2251 2545 2840 3233 3231 1764 2055 2250 2250 2645 2938 2937 3037 1763 1853 2148 3130 3128 3130 2640 3228 3228 2147 2247 2540 3128 3128 2643 2743 3036 3329 1762 2054 2349 2348 2643 2743 3037 3330 1762 2053 2348 2643 2743 3036 3329
1020	70.89 A	68.603 323.751	71.498 308.684	507	1295 1852 1851 2246 2344 2737 3227 1951 2050 2838 2837 1633 2053 2153 2447 2448 2742 3035 3328 3328 1685 1851 2443 2835 3226 3324 2444 1612 2152 2547 2546 2741 3134 3134 3427 1689 2152 2546 2840 3134 3233 3233 1684 2050 2442 2934 3032 3812 2443 1684 2250 2251 2545 2840 3233 3231 1764 2055 2250 2250 2645 2938 2937 3037 1763 1853 2148 3130 3128 3130 2640 3228 3228 2147 2247 2540 3128 3128 2643 2743 3036 3329 1762 2054 2349 2348 2643 2743 3037 3330 1762 2053 2348 2643 2743 3036 3329
1493	70.89 A	68.484 329.376	68.503 329.293	5	1295 1852 1851 2246 2344 2737 3227 1951 2050 2838 2837 1633 2053 2153 2447 2448 2742 3035 3328 3328 1685 1851 2443 2835 3226 3324 2444 1612 2152 2547 2546 2741 3134 3134 3427 1689 2152 2546 2840 3134 3233 3233 1684 2050 2442 2934 3032 3812 2443 1684 2250 2251 2545 2840 3233 3231 1764 2055 2250 2250 2645 2938 2937 3037 1763 1853 2148 3130 3128 3130 2640 3228 3228 2147 2247 2540 3128 3128 2643 2743 3036 3329 1762 2054 2349 2348 2643 2743 3037 3330 1762 2053 2348 2643 2743 3036 3329
1321	70.89 A	68.445 329.532	71.794 304.255	12	1295 1852 1851 2246 2344 2737 3227 1951 2050 2838 2837 1633 2053 2153 2447 2448 2742 3035 3328 3328 1685 1851 2443 2835 3226 3324 2444 1612 2152 2547 2546 2741 3134 3134 3427 1689 2152 2546 2840 3134 3233 3233 1684 2050 2442 2934 3032 3812 2443 1684 2250 2251 2545 2840 3233 3231 1764 2055 2250 2250 2645 2938 2937 3037 1763 1853 2148 3130 3128 3130 2640 3228 3228 2147 2247 2540 3128 3128 2643 2743 3036 3329 1762 2054 2349 2348 2643 2743 3037 3330 1762 2053 2348 2643 2743 3036 3329
1278	70.89 A	71.326 310.857	71.440 309.528	21	1295 1852 1851 2246 2344 2737 3227 1951 2050 2838 2837 1633 2053 2153 2447 2448 2742 3035 3328 3328 1685 1851 2443 2835 3226 3324 2444 1612 2152 2547 2546 2741 3134 3134 3427 1689 2152 2546 2840 3134 3233 3233 1684 2050 2442 2934 3032 3812 2443 1684 2250 2251 2545 2840 3233 3231 1764 2055 2250 2250 2645 2938 2937 3037 1763 1853 2148 3130 3128 3130 2640 3228 3228 2147 2247 2540 3128 3128 2643 2743 3036 3329 1762 2054 2349 2348 2643 2743 3037 3330 1762 2053 2348 2643 2743 3036 3329
1235	70.89 A	71.392 310.110	71.441 309.515	13	1295 1852 1851 2246 2344 2737 3227 1951 2050 2838 2837 1633 2053 2153 2447 2448 2742 3035 3328 3328 1685 1851 2443 2835 3226 3324 2444 1612 2152 2547 2546 2741 3134 3134 3427 1689 2152 2546 2840 3134 3233 3233 1684 2050 2442 2934 3032 3812 2443 1684 2250 2251 2545 2840 3233 3231 1764 2055 2250 2250 2645 2938 2937 3037 1763 1853 2148 3130 3128 3130 2640 3228 3228 2147 2247 2540 3128 3128 2643 2743 3036 3329 1762 2054 2349 2348 2643 2743 3037 3330 1762 2053 2348 2643 2743 3036 3329
690	70.97 A	68.590 329.348	71.790 304.691	527	1295 1852 1851 2246 2344 2737 3227 1951 2050 2838 2837 1633 2053 2153 2447 2448 2742 3035 3328 3328 1685 1851 2443 2835 3226 3324 2444 1612 2152 2547 2546 2741 3134 3134 3427 1689 2152 2546 2840 3134 3233 3233 1684 2050 2442 2934 3032 3812 2443 1684 2250 2251 2545 2840 3233 3231 1764 2055 2250 2250 2645 2938 2937 3037 1763 1853 2148 3130 3128 3130 2640 3228 3228 2147 2247 2540 3128 3128 2643 2743 3036 3329 1762 2054 2349 2348 2643 2743 3037 3330 1762 2053 2348 2643 2743 3036 3329
446	70.98 A	69.127 326.991	71.388 310.684	651	1295 1852 1851 2246 2344 2737 3227 1951 2050 2838 2837 1633 2053 2153 2447 2448 2742 3035 3328 3328 1685 1851 2443 2835 3226 3324 2444 1612 2152 2547 2546 2741 3134 3134 3427 1689 2152 2546 2840 3134 3233 3233 1684 2050 2442 2934 3032 3812 2443 1684 2250 2251 2545 2840 3233 3231 1764 2055 2250 2250 2645 2938 2937 3037 1763 1853 2148 3130 3128 3130 2640 3228 3228 2147 2247 2540 3128 3128 2643 2743 3036 3329 1762 2054 2349 2348 2643 2743 3037 3330 1762 2053 2348 2643 2743 3036 3329

Table 2. Seasat IDR Greenland Catalog (Cont.)

REV NUMBER	APPROXIMATE LATITUDE AND DIRECTION AT 315.0° E LONG	STARTING LAT & LONG DEG N DEG E	ENDING LAT & LONG DEG N DEG E	NUMBER OF PTS	BINS THROUGH WHICH REV TRAVERSES	
					D = ASCENDING	A = DESCENDING
489	71.14 A	68.763 330.180	71.722 307.495	720	1461 1617 1695 1775 1774 1773 1963 2062 2061	2161 2160 2260 2259 2258 2358 2356 2456 2456
					2455 2555 2554 2553 2653 2652 2651 2750 2750	2749 2849 2848 2847 2947 2946 2945 3044 3044
245	71.15 A	69.067 328.919	70.450 320.785	229	3043 3336 3436 3436 3531 3531 3538 3337 3337	3143 3142 3142 3241 3240 3239 3239 3628 3628
532	71.28 A	69.400 328.495	71.623 310.516	708	3158 3245 3245 3245 3243 3243 3242 3342 3342	3258 3337 3337 3337 3336 3336 3335 3534 3534
288	71.29 A	69.283 329.279	71.658 310.165	543	3047 3147 3147 3146 3145 3145 3144 3244 3244	3147 3146 3146 3145 3145 3145 3144 3245 3245
776	71.31 A	68.722 332.305	71.946 304.707	747	3340 3439 3439 3438 3438 3438 3437 3536 3536	3440 3536 3536 3536 3536 3536 3535 3828 3828
575	71.41 A	69.772 327.881	71.809 308.847	717	3634 3634 3634 3634 3634 3634 3634 3828 3828	3634 3634 3634 3634 3634 3634 3634 3828 3828
819	71.49 A	69.323 331.433	71.793 310.261	829	3829 3830 3830 3830 3830 3830 3830 3831 3831	3829 3830 3830 3830 3830 3830 3830 3831 3831
618	71.52 A	69.877 328.709	71.779 310.852	884	3734 3734 3734 3734 3734 3734 3734 3735 3735	3734 3734 3734 3734 3734 3734 3734 3735 3735

Table 2. Seasat IDR Greenland Catalog (Cont.)

REV NUMBER	APPROXIMATE LATITUDE AND DIRECTION AT 315.0 E LONG				STARTING LAT & LONG DEG N DEG E				ENDING LAT & LONG DEG N DEG E				NUMBER OF PTS	BINS THROUGH WHICH REV TRAVERSES	
	A = ASCENDING	D = DESCENDING	A = ASCENDING	D = DESCENDING	A = ASCENDING	D = DESCENDING	A = ASCENDING	D = DESCENDING	A = ASCENDING	D = DESCENDING	A = ASCENDING	D = DESCENDING		A = ASCENDING	D = DESCENDING
417	71.63	A	69.747	331.077	71.963	308.100	928		2765	2864	2569	2863	2668	2667	2766
									3059	3158	3157	3156	2962	2961	2960
									3353	3352	3351	3451	3256	3255	3254
									3354	3545	3645	3644	3448	3447	3547
									3739	3839	3838	3837	3836	3835	3933
									3932	3931	4029	4028	4025	4124	4121
173	71.64	A	69.810	330.911	71.949	308.763	824		2078	2671	2569	2668	2766	2865	2864
									2963	2962	2961	3060	3059	3158	3157
									3156	3256	3255	3254	3353	3352	3451
									3450	3449	3549	3548	3547	3646	3645
									3741	3739	3839	3838	3836	3936	3935
									3934	3932	3931	4031	4029	4028	4125
1034	71.64	A	69.581	332.324	71.961	308.657	803		1785	2078	2176	2472	2569	2668	2765
									2864	2863	2963	2962	2961	3060	3159
									3158	3157	3257	3256	3255	3354	3353
									3452	3451	3450	3449	3548	3547	3546
									3645	3644	3643	3743	3742	3840	3839
									3838	3837	3836	3936	3935	3934	4032
									4031	4029	4028	4026	4126		
1164	71.64	A	69.260	334.100	69.277	334.012	7		1709	1709	1789	1884	1982	1981	2080
									72.055	72.055	72.055	72.055	2964	3064	3156
									71.65	71.65	71.65	71.65	3257	3357	3356
									71.65	71.65	71.65	71.65	3551	3550	3649
									71.65	71.65	71.65	71.65	3552	3551	3648
									71.65	71.65	71.65	71.65	3553	3552	3647
									71.65	71.65	71.65	71.65	3554	3553	3646
									71.65	71.65	71.65	71.65	3555	3554	3645
									71.65	71.65	71.65	71.65	3556	3555	3644
									71.65	71.65	71.65	71.65	3557	3556	3643
									71.65	71.65	71.65	71.65	3558	3557	3642
503	71.81	A	69.687	354.318	72.033	308.179	618		1886	1986	2478	2576	2665	2748	2846
									3360	3359	3358	3458	3457	3545	3644
									3355	3353	3352	3650	3750	3748	3845
									3655	3653	3652	3651	3842	3941	3939
									3846	3845	3844	3843	4033	4032	4132
									3938	4038	4037	4036	4035	4034	4133
									4128	4126	4125	4125	4221	4221	4321
									4284	2675	2871	2968	3066	3164	3264
									3360	3359	3459	3458	3457	3556	3654
									3553	3653	3652	3651	3650	3749	3843
									3846	3845	3844	3843	3942	3941	3940
									3947	3946	3945	3944	3943	3942	3941
259	71.81	A	69.865	333.460	72.027	308.669	684		2084	2675	2871	2968	3066	3163	3261
									3360	3359	3459	3458	3457	3556	3654
									3553	3653	3652	3651	3650	3749	3842
									3846	3845	3844	3843	3942	3941	3940
									3939	3938	4038	4037	4036	4035	4133
									4132	4131	4130	4129	4224	4223	4322
									4264	3264	3263	3262	3364	3460	3459
									3365	3365	3364	3363	3462	3563	3753
									3558	3557	3556	3555	3654	3848	3945
									3559	3558	3557	3556	3654	3849	4038
									3751	3750	3749	3748	3942	4042	4221
									3944	3943	4132	4131	4228	4227	4325

Table 2. Seasat IDR Greenland Catalog (Cont.)

REV NUMBER	APPROXIMATE LATITUDE AND DIRECTION AT 315.0° E LONG		STARTING LAT & LONG DEG N DEG E		ENDING LAT & LONG DEG N DEG E		NUMBER OF PTS	BINS THROUGH WHICH REV TRAVERSES
	D = ASCENDING	D = DESCENDING	69.964	334.822	72.057	308.825		
790	71.90	A	69.964	334.822	72.057	308.825	816	
833	71.97	A	70.953	329.553	72.068	308.879	823	
632	71.98	A	70.462	333.710	72.066	308.696	920	
876	72.00	A	70.937	331.007	72.064	308.925	767	
1678	72.01	A	72.074	310.096	72.021	305.764	21	
1435	72.01	A	72.073	309.956	72.013	305.452	20	
1592	72.01	A	72.072	309.894	72.021	305.851	11	
1349	72.01	A	72.170	309.528	72.035	306.505	27	
1306	72.01	A	72.069	309.203	72.020	305.778	29	
1120	72.01	A	72.065	312.211	72.013	305.508	90	
675	72.02	A	71.225	328.601	72.052	308.057	667	
431	72.02	A	70.988	331.061	72.058	308.991	785	
187	72.02	A	70.710	333.624	72.049	308.229	823	

Table 2. Seasat IDR Greenland Catalog (Cont.)

REV NUMBER	APPROXIMATE LATITUDE AND DIRECTION AT		STARTING LAT & LONG DEG N DEG E		ENDING LAT & LONG DEG N DEG E		NUMBER OF PTS	BINS THROUGH WHICH REV TRAVERSSES
	315.0 E LONG	A = ASCENDING D = DESCENDING	70.789	334.161	72.046	309.008		
718	72.04	A	70.789	334.161	72.046	309.008	920	
474	72.05	A	71.147	330.993	72.042	308.969	740	
230	72.05	A	71.310	329.468	71.936	304.995	868	
517	72.06	A	71.108	332.832	71.997	308.170	677	
273	72.06	A	72.026	317.604	71.849	304.291	340	
761	72.06	A	71.338	330.727	72.011	308.893	867	
560	72.07	A	71.353	331.708	71.985	309.128	817	
572	59.09	D	59.901	316.127	59.901	316.127	1	
773	59.78	D	60.348	315.859	60.206	315.619	3	
285	59.94	D	60.247	315.436	60.096	315.183	12	
529	60.00	D	61.280	317.068	60.079	314.975	21	
443	61.65	D	62.073	315.680	60.943	313.572	19	
687	61.71	D	62.754	316.882	60.902	313.529	48	
1189	62.02	D	63.842	318.874	60.967	313.056	139	
1232	62.02	D	63.272	317.584	60.965	313.043	145	
1275	62.02	D	63.861	318.903	60.970	313.046	125	

Table 2. Seasat IDR Greenland Catalog (Cont.)

REV NUMBER	APPROXIMATE LATITUDE AND DIRECTION AT 315.0° E LONG	STARTING LAT & LONG DEG N DEG E	ENDING LAT & LONG DEG N DEG E	NUMBER OF PTS	BINS THROUGH WHICH REV TRAVERSES
A = ASCENDING D = DESCENDING					
1318	62.02 D	63.712 318.557	61.938 314.837	88	339 298 258 217
1361	62.02 D	63.622 318.353	60.830 312.793	83	339 299 258 217
1447	62.02 D	63.682 318.489	62.161 315.272	36	339 299 258 216
1490	62.02 D	63.685 318.500	61.940 314.846	70	339 299 258 216
1017	62.06 D	63.589 318.201	61.689 314.283	46	299 258 217 175
888	62.20 D	63.112 316.886	61.048 312.857	89	257 216 176 135
156	62.35 D	63.563 317.551	61.641 313.600	73	298 256 175 135
400	62.40 D	63.344 316.870	60.991 312.213	152	297 257 216 134
644	62.45 D	64.026 318.249	61.465 312.904	166	339 338 298 256
845	62.57 D	64.370 318.926	61.461 312.749	120	174 216 215 174
601	63.15 D	66.907 324.845	61.474 311.473	191	822 771 668 419
802	63.47 D	69.738 336.460	61.918 311.703	242	215 214 174 173
558	63.80 D	69.565 334.653	61.751 310.546	448	1992 1890 1708 1463
759	64.35 D	69.198 331.511	62.591 310.996	381	1790 1707 1625 1379
271	64.37 D	69.984 335.841	62.745 311.259	313	2190 2189 2089 1885
515	64.42 D	68.898 329.819	62.874 311.347	315	1131 819 666 514
228	64.95 D	70.084 335.038	62.949 310.251	363	1540 1459 1212 1132
472	64.99 D	69.999 334.310	62.821 309.793	507	2285 2085 1703 1702
716	65.06 D	69.983 334.099	62.840 309.727	468	1047 966 884 817
429	65.53 D	70.139 333.759	63.133 309.013	817	2186 2084 1700 1620

Table 2. Seasat IDR Greenland Catalog (Cont.)

REV NUMBER	APPROXIMATE LATITUDE AND DIRECTION AT 315.0° LONG				STARTING LAT & LONG DEG N DEG E				ENDING LAT & LONG DEG N DEG E				NUMBER OF PTS	BINS THROUGH WHICH REV TRAVERSSES
	A = ASCENDING	D = DESCENDING	A = ASCENDING	D = DESCENDING	A = ASCENDING	D = DESCENDING	A = ASCENDING	D = DESCENDING	A = ASCENDING	D = DESCENDING	A = ASCENDING	D = DESCENDING	A = ASCENDING	D = DESCENDING
673	65.57	D	69.737	331.124	63.265	309.126	689							
1175	65.61	D	64.162	311.256	63.381	309.465	29							
1218	65.61	D	64.387	311.790	63.528	309.782	40							
1261	65.61	D	64.592	312.288	63.432	309.360	32							
1390	65.61	D	63.383	309.445	63.285	309.231	13							
1476	65.61	D	70.511	336.162	63.169	308.982	17							
874	65.75	D	69.264	328.245	63.499	309.333	739							
630	66.07	D	70.827	337.172	63.687	308.620	816							
831	66.19	D	69.477	327.958	64.275	309.734	814							
587	66.55	D	70.986	337.118	64.639	309.448	863							
788	66.82	D	71.121	337.569	65.203	310.106	844							
544	66.99	D	70.669	332.999	64.669	308.079	771							
257	67.38	D	71.128	335.768	65.327	308.544	699							

Table 2. Seasat IDR Greenland Catalog (Cont.)

REV NUMBER	APPROXIMATE LATITUDE AND DIRECTION AT 315.0° E LONG	STARTING LAT & LONG DEG N DEG E	ENDING LAT & LONG DEG N DEG E	NUMBER OF PTS	EINS THROUGH WHICH REV TRAVERSES								
					A = ASCENDING	D = DESCENDING							
501	67.41	D	70.502	330.295	65.479	308.775	837	2776	2268	2168	2166	2066	2065
								1965	1862	1605	1603	1523	1522
								1441	1440	1360	1359	1278	1277
								1195	1115	1114	1033	1032	1196
								870	869	808	807	757	705
								653	552	551	551	756	654
1161	68.10	D	71.460	336.674	66.215	308.406	16	3692	864	805	651		
1204	68.11	D	67.081	311.186	65.948	307.596	61	804	754	753	702	650	600
1333	68.11	D	66.601	309.579	66.386	308.903	5	752	702				
1376	68.11	D	71.442	336.417	66.507	309.282	14	3692	3691	702			
1419	68.11	D	66.574	309.493	65.867	307.345	10	702	650	600			
1032	68.11	D	71.094	332.637	66.128	308.073	571	3282	2974	2873	2771	2669	2566
								2364	2263	1958	1957	1856	1855
								1762	1682	1681	1680	1600	1764
								1435	1355	1354	1273	1272	1436
								1027	1026	946	945	864	1109
								702	651			805	1028
659	68.19	D	71.155	332.783	66.965	310.253	678	3382	3381	3281	2974	2872	2566
								2565	2465	2464	2260	2160	2057
								1957	1956	1856	1855	1764	1763
								1671	1679	1679	1598	1597	1517
								1271	1271	1270	1190	1189	1108
								1027	1026	944	864	804	1107
616	68.53	D	71.567	336.124	66.730	308.023	691	3791	3277	2766	2765	2663	2562
								2561	2461	2460	2360	2358	2257
								2155	2055	2054	2053	1952	1761
								1760	1759	1758	1678	1677	1594
								1514	1513	1432	1351	1349	1268
								1267	1187	1186	1105	1024	942
573	68.86	D	71.683	336.383	66.737	306.600	803	3802	801	751			
								3374	3273	3272	3170	3068	2965
								2761	2661	2660	2559	2558	2456
								2355	2354	2254	2153	2152	2051
								1950	1949	1848	1847	1758	1676
								1674	1593	1592	1511	1510	1429
								1347	1346	1266	1265	1184	1348
								1021	1020	940	857	800	1102
								3992	3991	3270	3269	3168	1101
								3065	2965	2964	2863	2862	2760
								2759	2659	2658	2557	2555	2454
								2354	2353	2352	2252	2251	2049
								2048	1947	1946	1845	1755	1509
								1428	1427	1182	1181	1099	938
286	69.14	D	71.771	336.642	67.496	307.959	610	3992	3371	3271	3270	3167	2964
								2963	2962	2862	2861	2759	2658
								2657	2656	2555	2455	2454	2353
								2351	2251	2250	2150	2149	2047
								1754	1673	1672	1671	1591	1427
								1425	1345	1344	1264	1182	936

Table 2. Seasat IDR Greenland Catalog (Cont.)

REV NUMBER	APPROXIMATE LATITUDE AND DIRECTION AT 315.0° E LONG	LAT & LONG DEG N DEG E	ENDING LAT & LONG DEG N DEG E	NUMBER OF PTS	BINS THROUGH WHICH REV TRAVERSES	
					D = ASCENDING	D = DESCENDING
530	69.16 D	71.783	336.667	67.258	306.921	540
243	69.42 D	71.233	328.002	67.725	307.375	453
200	69.68 D	71.761	333.607	68.148	307.601	622
444	69.70 D	71.878	335.777	68.822	310.346	494
688	69.72 D	71.441	328.535	68.585	309.091	549
1147	69.83 D	68.745	309.391	68.715	309.251	7
1190	69.83 D	69.286	311.992	68.940	310.282	12
1276	69.83 D	69.477	312.978	69.005	310.574	24
1405	69.83 D	71.876	334.953	68.154	306.807	2
1491	69.83 D	71.879	334.999	68.874	309.950	14
1018	69.84 D	71.597	330.040	69.251	311.723	548
889	69.89 D	71.657	330.687	68.840	309.463	640

Table 2. Seasat IDR Greenland Catalog (Cont.).

REV NUMBER	APPROXIMATE LATITUDE AND DIRECTION AT 315.0 E LONG		STARTING LAT & LONG DEG N DEG E		ENDING LAT & LONG DEG N DEG E		NUMBER OF PTS	BINS THROUGH WHICH REV TRAVERSES	
	A = ASCENDING	D = DESCENDING	71.680	330.606	68.899	309.260	264	3155	3055
401	69.95	D	71.920	335.139	68.859	308.895	635	3360	3055
645	69.97	D	71.672	330.105	68.958	309.216	638	3462	3055
846	70.00	D	71.960	334.170	69.319	309.108	474	3772	3055
803	70.30	D	71.929	332.481	69.499	309.216	749	3053	3055
559	70.41	D	71.929	332.481	69.499	309.216	749	2951	3055
760	70.58	D	71.895	330.394	70.041	311.170	617	2952	3055
272	70.59	D	72.051	336.279	69.867	310.053	810	2953	3055
516	70.61	D	72.019	334.122	69.643	308.571	731	2954	3055

Table 2. Seasat IDR Greenland Catalog (Cont.).

REV NUMBER	APPROXIMATE LATITUDE AND DIRECTION AT 315.0 E LONG		STARTING LAT & LONG DEG N DEG E		ENDING LAT & LONG DEG N DEG E		NUMBER OF PTS	BINS THROUGH WH-CH REV TRAVERSES	
	A = ASCENDING	D = DESCENDING	70.78	D	71.862	328.222	70.198	310.700	490
229	70.79	D	72.062	335.966	69.723	307.589	667	4071	3655
473	70.81	D	72.045	333.944	70.013	309.212	700	4069	3654
717	70.95	D	72.065	336.063	69.641	305.868	680	4070	3654
186	70.96	D	72.065	335.969	70.210	309.147	602	4067	3654
430	70.97	D	71.787	326.853	71.022	315.271	275	4071	3654
674	70.99	D	70.217	309.036	69.672	305.706	16	4067	3654
1176	70.99	D	70.564	311.469	70.220	309.040	18	4067	3654
1219	70.99	D	72.074	335.822	72.074	335.725	4	4067	3654
1305	70.99	D	72.072	336.306	69.615	305.362	21	4067	3654
1391	70.99	D	72.074	335.714	69.657	305.594	21	4067	3654
1434	70.99	D	72.074	336.011	70.064	308.019	23	4067	3654
1477	70.99	D	72.074	333.541	69.867	306.464	596	4067	3654
875	71.03	D	72.062	333.541	69.867	306.464	596	4067	3654

Table 2. Seasat IDR Greenland Catalog (Cont.)

REV NUMBER	APPROXIMATE LATITUDE AND DIRECTION AT 315.0° E LONG	STARTING LAT & LONG DEG N DEG E	ENDING LAT & LONG DEG N DEG E	NUMBER OF PTS	BINS THROUGH WHICH REV TRAVERSES	
					A = ASCENDING	D = DESCENDING
631	71.13 D	72.056 336.124	69.971 305.989	600	4291 4282 4062 3959 3852 3645 3339 3132	4277 4274 4063 3958 3751 3545 3337 3031
832	71.16 D	72.069 333.945	70.693 310.739	564	4285 4275 4060 3854 3647 3440 3134	4273 4063 4058 3852 3645 3439 3133
588	71.27 D	72.062 331.181	70.796 310.395	735	4278 4273 4060 3959 3744 3538 3028	4267 4266 4059 4058 3851 3644 3437
258	71.51 D	72.062 328.753	70.994 309.425	754	4167 4166 4165 4163 4162 4161 4160	4167 4166 4165 4163 4056 3956 3849
502	71.51 D	71.922 322.051	71.279 312.062	355	4159 4158 4157 4156 4155 4154 4153	4159 4158 4157 4156 4056 3956 3845
459	71.62 D	72.061 327.099	71.118 308.974	777	4160 4159 4158 4157 4156 4155 4154	4160 4159 4158 4157 4051 3951 3845
1162	71.70 D	71.432 311.229	71.270 309.385	26	4162 4161 4160 4159 4158 4157 4156	4162 4161 4160 4159 4050 3950 3843
1205	71.70 D	71.435 311.242	71.240 309.042	34	4163 4162 4161 4160 4159 4158 4157	4163 4162 4161 4160 4051 3951 3844
1248	71.70 D	71.526 312.374	71.247 309.102	47	4164 4163 4162 4161 4160 4159 4158	4164 4163 4162 4161 4052 3952 3845
1291	71.70 D	71.881 335.984	71.885 335.908	3	4165 4164 4163 4162 4161 4160 4159	4165 4164 4163 4162 4053 3953 3846
1377	71.70 D	71.881 335.975	71.882 335.938	3	4166 4165 4164 4163 4162 4161 4160	4166 4165 4164 4163 4054 3954 3847
172	71.71 D	71.995 332.362	71.255 309.116	609	4167 4166 4165 4164 4163 4162 4161	4167 4166 4165 4164 4055 3955 3848
617	71.80 D	71.753 336.435	70.990 304.690	612	4273 4272 4271 4270 4269 4268 4267	4272 4271 4270 4269 4158 4058 3949
574	71.87 D	72.064 324.774	71.898 315.464	33	4262 4258 4140	4261 4257 4255 4149 4039

Table 2. Seasat IDR Greenland Catalog (Cont.)

REV NUMBER	APPROXIMATE LATITUDE AND DIRECTION AT 315.0° E LONG	STARTING LAT & DEG N	LONG DEG E	ENDING LAT & DEG N	LONG DEG E	NUMBER OF PTS	BINS THROUGH WHICH REV TRAVERSES	
							A = ASCENDING	D = DESCENDING
775	71.91 D	71.690	335.084	71.638	309.627	745	388.8	398.5
							426.1	425.9
							425.2	425.0
							414.6	414.3
							403.6	403.5
							382.5	417.0
							426.8	426.5
							425.8	425.6
							424.9	424.8
							414.0	414.0
							403.3	403.2
							369.3	379.0
							426.0	425.9
							425.0	425.0
							424.9	424.9
							424.2	424.1
							413.4	413.3
							392.5	371.8
							416.8	416.6
							425.8	425.8
							424.8	424.8
							413.9	413.9
							403.3	403.2
							368.3	388.0
							425.9	425.8
							424.9	424.9
							424.0	424.0
							413.5	413.4
							388.0	397.6
							416.2	426.2
							425.0	425.3
							424.4	424.4
							413.6	413.5
							403.0	402.9
							392.7	402.8
287	71.92 D	71.991	327.967	71.678	310.001	723	388.8	398.5
							426.0	425.9
							425.2	425.1
							424.4	424.4
							413.7	413.6
							403.5	403.4
244	71.97 D	71.428	336.944	71.560	306.846	695	388.8	398.5
							426.0	425.9
							425.2	425.1
							424.4	424.4
							413.7	413.6
							403.5	403.4
488	71.98 D	71.968	327.139	71.823	310.967	748	388.8	398.5
							426.0	425.9
							425.2	425.1
							424.4	424.4
							413.7	413.6
							403.5	403.4
201	72.01 D	71.455	335.175	71.563	305.442	728	388.8	398.5
							426.0	425.9
							425.2	425.1
							424.4	424.4
							413.7	413.6
							403.5	403.4
445	72.01 D	71.677	331.884	71.848	310.050	718	388.8	398.5
							426.0	425.9
							425.2	425.1
							424.4	424.4
							413.7	413.6
							403.5	403.4
689	72.02 D	71.737	330.754	71.807	309.007	636	388.8	398.5
							426.0	425.9
							425.2	425.1
							424.4	424.4
							413.7	413.6
							403.5	403.4
1148	72.03 D	71.176	337.573	71.860	309.568	38	388.8	398.5
							426.0	425.9
							425.2	425.1
							424.4	424.4
							413.7	413.6
							403.5	403.4
1234	72.03 D	71.185	337.489	71.605	305.097	32	388.8	398.5
							426.0	425.9
							425.2	425.1
							424.4	424.4
							413.7	413.6
							403.5	403.4
1320	72.03 D	71.256	336.741	71.317	336.083	4	388.8	398.5
							426.0	425.9
							425.2	425.1
							424.4	424.4
							413.7	413.6
							403.5	403.4
1406	72.03 D	71.591	304.897	71.591	304.897	1	388.8	398.5
							426.0	425.9
							425.2	425.1
							424.4	424.4
							413.7	413.6
							403.5	403.4
1449	72.03 D	71.308	336.191	71.319	336.066	8	388.8	398.5
							426.0	425.9
							425.2	425.1
							424.4	424.4
							413.7	413.6
							403.5	403.4
1492	72.03 D	71.253	336.791	71.619	305.287	18	388.8	398.5
							426.0	425.9
							425.2	425.1
							424.4	424.4
							413.7	413.6
							403.5	403.4
1019	72.03 D	71.869	327.741	71.764	307.594	640	388.8	398.5
							426.0	425.9
							425.2	425.1
							424.4	424.4
							413.7	413.6
							403.5	403.4

Table 2. Seasat IDR Greenland Catalog (Cont.)

REV NUMBER	APPROXIMATE LATITUDE AND DIRECTION AT 315.0° E LONG	STARTING LAT & LONG DEG N DEG E	ENDING LAT & LONG DEG N DEG E	NUMBER OF PTS	BINS THROUGH WHICH REV TRAVERSES	
					A = ASCENDING	D = DESCENDING
890	72.04 D	71.627 331.720	71.877 309.651	690	3880	3975
					4164	4163
					4256	4255
					4247	4246
					4238	4237
					4128	4127
158	72.04 D	71.286 335.709	71.894 309.835	561	3490	3973
					4256	4255
					4247	4246
					4238	4237
					4128	4127
646	72.04 D	71.074 337.507	71.606 304.224	799	3294	3394
					3875	3975
					4162	4161
					4253	4252
					4244	4243
					4235	4234
847	72.05 D	71.119 336.964	71.625 304.340	643	4127	4126
					3393	4070
					4257	4256
					4248	4247
					4239	4238
603	72.06 D	70.896 337.678	71.737 304.836	743	4131	4130
					3095	3195
					3777	3873
					4160	4159
					4252	4251
					4243	4242
					4239	4238
804	72.06 D	71.504 330.770	71.735 304.182	634	4239	4232
					4154	4153
					4246	4245
					4237	4236
					4228	4126
					3911	3912

Table 3. Summary of Seasat Greenland Orbit Adjustment

REV	NUM PTS	COEFFICIENTS		TIME (FRAC OF DAY) AT		ORB ADJ (M) AT		END LAT		END LON		
		(1)	(2)	(3)		310. E	320. E	330. E		310. E	320. E	
81	-0.12210D 01	0.14418D 03	0.0	-0.13509D 06	0.0	.0136293	.0101568	0.539	0.243	60.89	315.24	
146	-0.64367D 02	0.59160D 04	-0.89803D 04	-0.51262D 02	-0.41959D 01	.0210971	.0196986	0.124	-0.299	63.56	315.55	
156	561	-0.51120D 01	0.63629D 00	-0.59256D 02	-0.41959D 01	.0145630	.0134766	0.02667	-0.183	67.71	315.71	
160	330	-0.58924D 01	0.61031D 03	-0.12899D 05	-0.19329D 05	.0185198	.0179070	0.17161	-0.230	67.49	316.49	
172	609	-0.28182D 01	0.57241D 03	-0.82876D 03	-0.33454D 03	.0080864	.0072107	0.09888	-0.986	71.99	312.36	
173	386	-0.44669D 01	0.25143D 01	-0.68048D 02	-0.40014D 04	.0191070	.0184454	0.17369	-0.187	71.95	308.76	
184	680	-0.44669D 01	0.25143D 01	-0.68048D 02	-0.40014D 04	.0191070	.0184454	0.17369	-0.062	66.67	306.14	
187	823	-0.44943D 01	-0.48294D 01	-0.10888D 05	0.175368	.0169438	0.16523	-0.626	-0.535	66.64	305.87	
189	100	-0.39230D 01	0.23892D 03	0.0	.0137990	.0124429	0.10504	-0.626	-0.535	64.85	308.23	
200	622	-0.14226D 01	0.27565D 02	0.0	.0197759	.0190297	0.18376	-0.881	-0.808	68.15	307.60	
201	728	-0.21048D 01	0.20605D 03	-0.51261D 04	.0180666	.0174732	0.16818	-0.055	-0.087	71.56	305.44	
228	363	-0.19108D 01	0.0	-0.81050D 02	0.0	.0210172	.0199209	0.19096	-1.901	-1.742	62.95	310.25
229	690	-0.17429D 01	0.26477D 02	0.0	.0192046	.0185320	0.17981	-1.234	-1.252	70.20	310.70	
230	868	-0.10406D 01	-0.15646D 03	0.0	.0190277D 04	.0176171	.0170256	0.16409	-1.125	-1.072	70.94	305.00
231	560	-0.27936D 01	-0.07442D 03	-0.52791D 04	.0084486	.0077227	0.06852	-1.122	-1.051	70.60	310.84	
232	172	-0.22104D 01	0.66001D 02	0.0	.0139619	.0126669	0.10832	-1.289	-1.374	65.30	308.67	
243	453	-0.54545D 00	-0.11053D 03	-0.19396D 04	.0198904	.0191262	0.18462	-1.977	-1.950	67.72	307.37	
244	695	-0.28233D 01	0.18069D 03	-0.48117D 04	.0181430	.0175471	0.16954	-1.025	-1.134	71.56	306.85	
245	229	-0.34997D 01	0.23700D 03	0.0	.0192909	.0097909	0.09951	-1.025	-1.179	70.45	320.78	
258	699	-0.53465D 01	0.13637D 04	0.0	.0035649	.0026540	0.01904	-0.485	-1.252	71.94	308.54	
259	754	-0.20666D 01	-0.10766D 02	-0.13418D 05	.0187016	.0180763	0.17482	-1.391	-1.429	70.99	308.42	
260	430	-0.60361D 00	0.10232D 03	-0.36284D 04	.0070200	.0101135	0.09456	-1.646	-1.537	72.03	308.67	
271	313	-0.44043D 00	-0.17967D 03	-0.10582D 05	.0207976	.0196561	0.18768	-0.400	-0.554	69.98	321.17	
272	810	-0.16634D 01	0.24124D 02	-0.50886D 03	.0193172	.0186326	0.18012	-0.504	-0.109	66.96	328.28	
273	340	-0.98281D 00	0.18943D 02	-0.23432D 04	.0177036	.0171131	0.16502	-0.556	-0.585	72.05	317.60	
274	482	-0.41345D 00	0.32566D 02	0.0	.0085316	.0078210	0.06976	-0.405	-0.432	67.85	326.80	
275	207	-0.43804D 01	0.27273D 03	0.0	.0141176	.014176	0.11407	-0.246	-0.246	62.10	317.30	
286	610	-0.66857D 01	0.22566D 02	0.0	.0230697	.0215595	0.024546	-0.086	-0.124	60.25	315.44	
287	723	-0.91502D 01	0.22029D 03	-0.66123D 04	.0200137	.0192300	0.18555	-0.328	-0.297	67.50	316.64	
288	543	-0.43283D 01	0.86317D 03	-0.18735D 05	.0182321	.0176332	0.0153724	-0.359	-0.372	71.77	336.64	
289	357	-0.50051D 01	0.31640D 03	-0.11261D 05	.0167354	.0160951	0.0127060	-0.278	-0.317	69.28	329.28	
400	152	-0.23481D 01	0.12516D 03	0.0	.0223424	.0210421	0.020607	-0.448	-0.285	63.39	318.53	
401	264	-0.17572D 01	0.80768D 03	-0.27221D 04	.01916448	.019176	0.0182748	-0.186	-0.281	68.99	330.61	
417	928	-0.66350D 01	0.40334D 03	-0.12698D 05	.0104255	.0098073	0.0091262	-0.827	-0.668	60.90	308.10	
418	313	-0.30628D 01	0.65066D 03	0.0	.0080285	.0071490	0.006206	-0.643	-0.828	61.96	330.04	
429	817	-0.15870D 01	0.60917D 02	0.0	.0213475	.0174986	0.0194665	-0.271	-0.579	65.59	333.76	
430	602	-0.13764D 01	0.34640D 02	0.0	.0190901	.0184300	0.0178221	-0.724	-0.747	70.06	335.15	
431	785	-0.23153D 01	0.29412D 03	-0.86364D 04	.0175274	.0169341	0.0163107	-0.187	-0.189	70.99	331.06	
432	437	-0.34115D 00	-0.18437D 02	-0.17554D 04	.0083462	.0076016	0.0066995	-0.065	-0.139	72.26	327.91	
443	19	-0.61101D 01	0.26376D 03	0.0	.0256469	.0212029	0.0208185	-0.158	-0.158	67.26	315.68	
444	494	-0.37914D 01	0.15481D 02	0.0	.0042859	.0035269	0.0028900	-1.003	-1.487	66.14	330.35	
445	718	-0.33461D 00	-0.10909D 03	-0.78595D 04	.0180477	.0174545	0.0168594	-0.614	-0.605	71.68	321.85	
446	651	-0.46508D 00	0.10344D 02	-0.60502D 04	.0101422	.0098816	0.0087227	-0.167	-0.167	69.13	326.99	
447	777	-0.11154D 01	0.19972D 03	-0.17605D 04	.0186035	.0179856	0.0173938	-0.506	-0.528	72.06	327.10	
448	790	-0.54749D 00	0.17605D 03	-0.83006D 04	.0105549	.0099426	0.0092733	-0.386	-0.371	71.99	334.50	
449	294	-0.12631D 01	0.13393D 03	-0.66816D 04	.0024859	.0021429	0.0019953	-0.616	-0.642	67.04	335.28	
450	507	-0.22462D 00	-0.28432D 03	0.11458D 02	.0042859	.0035269	0.0028900	-0.592	-0.805	70.00	334.81	
451	667	-0.12911D 01	0.10344D 02	-0.24800D 04	.0191956	.0185245	0.0179114	-0.179	-0.248	72.06	335.97	
452	744	-0.29567D 01	0.33546D 03	-0.95676D 04	.0176147	.0176147	0.0164062	-0.016	-0.019	71.15	330.99	
453	335	-0.26823D 01	0.12484D 03	-0.12484D 05	.0083867	.0076587	0.0067847	-0.485	-0.279	70.59	310.75	
454	475	-0.45254D 01	0.31046D 03	0.0	.0139308	.0124281	0.0107802	-0.200	-0.179	61.57	316.70	
455	748	-0.44672D 01	0.48252D 03	-0.11995D 05	.0181377	.0175422	0.0169492	-0.339	-0.265	310.31	310.97	

Table 3. Summary of Seasat Greenland Orbit Adjustment (Cont.)

REV	NUM PTS	COEFFICIENTS		TIME (FRAC OF DAY) AT		ORB ADJ (M) AT		START LAT		END LAT		END LON	
		(1)	(2)	(3)	(4)	310.0 E	320.0 E	330.0 E	310.0 E	320.0 E	330.0 E	310.0 E	320.0 E
489	720	-0.529690	0.0	0.816870	0.2	-0.715340	0.4	-0.103946	0.097640	0.090029	-0.453	-0.413	-0.374
490	218	-0.345250	0.1	0.241060	0.3	0.384480	0.4	0.0206891	0.197825	0.0190351	-0.119	-0.125	-0.357
501	837	-0.109210	0.1	-0.857240	0.2	-0.436648	0.4	-0.0186966	0.180721	0.0174785	-0.228	-0.292	-0.339
502	355	0.230910	0.1	-0.871590	0.2	-0.422020	0.3	-0.0107065	0.0100993	0.009408	-0.072	-0.103	-0.657
503	618	-0.277690	0.1	0.637430	0.3	-0.259600	0.5	-0.008145	0.0073166	0.0062737	-0.415	-0.395	-0.379
504	217	-0.480000	0.0	-0.434980	0.2	-0.436640	0.4	-0.0206696	0.195340	0.0186503	-1.169	-1.401	-1.556
515	315	0.520250	0.0	-0.384740	0.3	-0.146660	0.4	-0.0193017	0.186187	0.0179996	-0.720	-0.687	-0.660
516	731	-0.935670	0.0	0.728970	0.2	-0.319930	0.4	-0.01765994	0.171088	0.016976	-0.575	-0.535	-0.493
517	677	-0.271680	0.0	0.398700	0.2	-0.323020	0.4	-0.00851926	0.078071	0.0065952	-0.476	-0.384	-0.273
518	529	0.683850	0.0	-0.144020	0.3	-0.929520	0.3	-0.0140940	0.028486	0.010984	-0.264	-0.678	-0.251
519	180	-0.494390	0.1	0.352020	0.3	0.0	0.0230598	0.0215991	0.020598	-1.197	-1.127	-1.222	
520	21	-0.158880	0.1	0.169700	0.2	0.0	0.0200015	0.0192203	0.0185669	-1.327	-1.327	-1.486	
529	540	-0.663150	0.0	-0.314340	0.3	0.145570	0.5	-0.0167259	0.0168645	0.0155998	-1.003	-0.968	-0.933
532	708	-0.125800	0.1	0.877800	0.2	-0.438810	0.4	-0.0208381	0.0199008	0.0179352	-0.508	-0.494	-0.394
544	771	-0.717160	0.0	0.170060	0.4	-0.211680	0.5	-0.0109298	0.0109290	0.0096164	-0.113	-0.062	-0.062
546	603	-0.318030	0.1	0.532920	0.3	-0.211680	0.5	-0.0080378	0.0072322	0.0062277	-0.802	-0.740	-0.662
547	403	-0.180770	0.0	-0.775590	0.2	-0.296030	0.1	-0.0213264	0.0201423	0.0189292	-0.172	-0.869	-1.405
558	448	-0.666470	0.2	0.587960	0.3	-0.546660	0.4	-0.0194110	0.0187150	0.0179150	-0.157	-0.105	-0.105
559	749	-0.714160	0.0	0.158780	0.3	-0.605790	0.4	-0.0177830	0.0171970	0.0165885	-0.194	-0.225	-0.253
560	817	-0.104140	0.1	-0.140380	0.3	-0.173180	0.4	-0.0093084	0.0086102	0.0078664	-0.115	-0.059	-0.053
561	561	-0.519420	0.1	0.270500	0.3	0.0	-0.042508	0.0415584	0.0401988	-0.661	-0.538	-0.111	
562	428	-0.201050	0.1	0.664400	0.2	0.0	-0.0228817	0.0213031	0.0205982	-0.490	-0.595	-0.671	
573	803	-0.109190	0.1	-0.350270	0.3	0.184490	0.5	-0.0201206	0.0193186	0.0183530	-0.671	-0.973	-1.213
574	335	-0.285380	0.1	0.160730	0.3	-0.550550	0.4	-0.0134026	0.0120680	0.0117251	-0.090	-0.066	-0.146
575	717	-0.727470	0.0	0.114710	0.3	-0.275610	0.3	-0.0148800	0.0139376	0.012031	-0.131	-0.131	-0.298
576	310	-0.413940	0.1	0.275610	0.3	0.0	-0.042508	0.0415584	0.0401988	-0.661	-0.538	-0.638	
577	587	-0.522520	0.0	-0.227850	0.2	0.224440	0.4	-0.0209599	0.0202556	0.0192404	-0.111	-0.079	-0.130
578	863	-0.225500	0.0	0.212950	0.2	-0.259870	0.4	-0.0082158	0.0074313	0.0064623	-0.627	-0.627	-0.601
579	735	-0.936500	0.0	0.729560	0.2	-0.440702	0.2	-0.0134026	0.0118896	0.0096357	-0.513	-0.538	-0.574
591	26	-0.283360	0.1	0.215490	0.3	0.0	-0.0176480	0.0176480	0.0176480	-0.131	-0.054	-0.272	
591	191	-0.541940	0.1	0.244970	0.2	-0.149560	0.3	-0.0171753	0.0171753	0.0170752	-0.436	-0.381	-0.338
603	743	-0.311970	0.1	-0.149560	0.3	-0.132350	0.4	-0.0176866	0.0172780	0.0167616	-0.152	-0.025	-0.141
604	103	-0.383820	0.1	-0.449650	0.3	-0.721830	0.4	-0.0095801	0.0088950	0.0080937	-0.193	-0.410	-0.672
605	321	-0.428870	0.0	0.531250	0.2	0.0	-0.0143912	0.0132480	0.0119301	-1.13	-1.13	-1.049	
616	691	-0.236130	0.0	0.357990	0.1	0.0	-0.0202547	0.0194301	0.0183330	-0.164	-0.164	-0.167	
617	612	-0.725410	0.0	-0.440702	0.2	0.0	-0.0183802	0.0177738	0.0177835	-0.083	-0.083	-0.057	
618	884	-0.365420	0.0	0.109850	0.3	-0.122680	0.5	-0.0091437	0.0085181	0.0078226	-0.342	-0.342	-0.366
619	293	-0.134390	0.1	0.187570	0.3	-0.128570	0.4	-0.0078671	0.0069550	0.0057722	-0.152	-0.039	-0.261
620	816	-0.224490	0.0	0.555570	0.2	-0.505440	0.4	-0.0175724	0.0165666	0.0151602	-0.360	-0.242	-0.155
621	600	-0.703440	0.0	0.635540	0.1	0.0	-0.0179570	0.0173655	0.0167672	-0.164	-0.164	-0.169	
622	920	-0.452070	0.1	0.491390	0.3	-0.134900	0.5	-0.0174279	0.0168320	0.0162065	-0.057	-0.057	-0.100
623	330	-0.760200	0.1	0.247190	0.2	-0.109850	0.3	-0.0082565	0.0074916	0.0065555	-0.375	-0.375	-0.369
624	449	-0.262140	0.1	0.216460	0.3	0.0	-0.0135752	0.0121352	0.01020593	-0.320	-0.085	-0.443	
625	166	-0.174810	0.1	0.915260	0.2	-0.149560	0.3	-0.0223023	0.0210991	0.0200320	-0.293	-0.175	-0.258
626	635	-0.605590	0.0	0.168920	0.3	-0.913200	0.4	-0.0175724	0.0168903	0.0156102	-0.360	-0.242	-0.155
627	799	-0.164820	0.1	0.264420	0.3	-0.792170	0.4	-0.0179570	0.0173655	0.0167672	-0.583	-0.583	-0.555
628	604	-0.452070	0.1	0.491390	0.3	-0.134900	0.5	-0.0174279	0.0168320	0.0162065	-0.057	-0.057	-0.100
629	574	-0.760200	0.1	0.247190	0.2	-0.109850	0.3	-0.0082565	0.0074916	0.0065555	-0.375	-0.375	-0.369
630	403	-0.274810	0.1	0.259400	0.3	0.0	-0.0145317	0.0134341	0.0119362	-0.193	-0.029	-0.043	
631	659	-0.161350	0.1	-0.771340	0.2	-0.642370	0.4	-0.0203903	0.0195414	0.0188264	-0.516	-0.516	-0.789
632	383	-0.155010	0.1	0.243770	0.3	0.0	-0.0053660	0.0048333	0.0033494	-0.405	-0.405	-0.734	
633	689	-0.343340	0.1	0.158900	0.3	0.0	-0.0213266	0.0202824	0.0194531	-0.211	-0.211	-0.342	
634	646	-0.298920	0.1	0.173931	0.3	-0.283550	0.5	-0.0190846	0.0184257	0.0178184	-0.793	-0.793	-1.182
635	275	-0.714850	0.0	0.330640	0.3	-0.714850	0.4	-0.0175169	0.0169233	0.0162992	-0.263	-0.263	-0.313
636	667	-0.386160	0.1	0.948680	0.2	-0.240680	0.4	-0.0083505	0.0076038	0.0066983	-0.687	-0.687	-0.784
637	449	-0.131110	0.1	0.241140	0.3	0.0	-0.0104139	0.01023803	0.0101752	-0.887	-0.887	-1.218	
638	71	-0.420310	0.1	0.241140	0.3	0.0	-0.0137527	0.0132803	0.0101693	-0.887	-0.887	-1.218	

Table 3. Summary of Seasat Greenland Orbit Adjustment (Cont.)

NUM	PTS	REV	COEFFICIENTS (2)	COEFFICIENTS (1)	TIME (FRAC OF DAY)	AT	ORB ADJ (M)	AT	START	END	
					310.E	320.E	330.E	310.E	320.E	330.E	
687	48	0	0.24916D 03	0.0	.0223233	.0209689	.0199557	-0.134	-0.386	60.90	
688	549	0	0.12075D 03	0.0	.0176703	.0170194	-0.403	-0.492	-0.571	68.58	
689	636	0	0.67422D 03	0.0	.0175776	.0169846	-0.136	-1.155	-0.019	71.79	
690	527	0	0.67295D 02	0.0	.0098189	.0091571	-0.147	-1.147	-0.448	66.93	
691	195	0	0.90309D 00	0.0	.0146393D 04	.0136167	-0.121906	-0.001	-0.447	310.66	
692	468	0	0.61915D 01	0.0	.0214093	.0203219	-0.196669	-0.702	-0.858	62.84	
693	716	0	0.65697D 00	0.0	.029347D 03	.010743D 05	-0.179056	-0.196	-0.152	309.73	
694	717	0	0.89886D 00	0.0	.047368D 02	.050560D 03	-0.191887	-0.185184	-0.111	70.01	
695	718	0	0.70002D 00	0.0	.0191887	.0185184	-0.179056	-0.196	-0.152	309.21	
696	719	0	0.22140D 01	0.0	.0176033	.0170115	-0.163942	-0.213	-0.135	72.05	
697	720	0	0.16038D 01	0.0	.0176033	.0170115	-0.163942	-0.213	-0.135	309.01	
698	721	0	0.53492D 00	0.0	.0084287	.0076948	-0.068241	-0.169	-0.021	70.61	
699	722	0	0.27965D 01	0.0	.0084287	.0076948	-0.068241	-0.169	-0.021	310.51	
700	723	0	0.42190D 03	0.0	.0203219	.0196669	-0.121906	-0.001	-0.447	65.54	
701	724	0	0.42190D 03	0.0	.0146393D 04	.0136167	-0.121906	-0.001	-0.447	309.01	
702	725	0	0.24034D 03	0.0	.0205251	.0193820	-0.184938	-0.408	-0.469	62.59	
703	726	0	0.73522D 04	0.0	.0193131	.0186280	-0.184938	-0.408	-0.503	70.04	
704	727	0	0.52664D 04	0.0	.0177086	.0171179	-0.165076	-0.177	-0.036	311.17	
705	728	0	0.86819D 02	0.0	.0085572	.008476	-0.251929	-0.213	-0.244	72.01	
706	729	0	0.89886D 03	0.0	.0085572	.008476	-0.251929	-0.213	-0.244	308.89	
707	730	0	0.10412D 04	0.0	.0085572	.008476	-0.251929	-0.213	-0.244	312.34	
708	731	0	0.16038D 02	0.0	.0085572	.008476	-0.251929	-0.213	-0.244	310.51	
709	732	0	0.12410D 04	0.0	.0084287	.0076948	-0.068241	-0.169	-0.021	66.39	
710	733	0	0.27965D 02	0.0	.0084287	.0076948	-0.068241	-0.169	-0.021	315.92	
711	734	0	0.40271D 03	0.0	.0200376	.0192502	-0.185732	-1.175	-1.607	67.51	
712	735	0	0.15515D 05	0.0	.0182548	.0176553	-0.170642	-0.053	-0.119	311.07	
713	736	0	0.24897D 04	0.0	.0161534	.0153938	-0.0891	-0.825	-0.739	71.64	
714	737	0	0.61115D 04	0.0	.0167520	.0161046	-0.127429	-0.859	-0.797	71.95	
715	738	0	0.16223D 01	0.0	.016213D 03	-0.42147D 03	-0.18465D 05	-0.187577	-0.250	-0.309	68.77
716	739	0	0.16154D 01	0.0	.016213D 03	-0.42147D 03	-0.18465D 05	-0.187577	-0.250	-0.309	307.73
717	740	0	0.89356D 02	0.0	.017145D 04	-0.25192D 03	-0.18465D 05	-0.187577	-0.250	-0.309	65.20
718	741	0	0.90562D 02	0.0	.017145D 04	-0.25192D 03	-0.18465D 05	-0.187577	-0.250	-0.309	310.81
719	742	0	0.26688D 04	0.0	.0085572	.008476	-0.251929	-0.213	-0.244	306.59	
720	743	0	0.90562D 02	0.0	.0085572	.008476	-0.251929	-0.213	-0.244	311.91	
721	744	0	0.11821D 01	0.0	.0141159	.0128839	-0.0111521	-0.405	-0.519	61.32	
722	745	0	0.36163D 00	0.0	.0152165	.0120408	-0.189285	-1.058	-1.145	60.21	
723	746	0	0.66809D 03	0.0	.0182548	.0176553	-0.170642	-1.175	-1.607	310.28	
724	747	0	0.16223D 01	0.0	.016213D 03	-0.42147D 03	-0.18465D 05	-0.187577	-0.250	-0.309	66.63
725	748	0	0.16154D 01	0.0	.016213D 03	-0.42147D 03	-0.18465D 05	-0.187577	-0.250	-0.309	304.71
726	749	0	0.66595D 03	0.0	.0135025	.0133055	-0.127429	-0.859	-0.797	68.77	
727	750	0	0.26659D 03	0.0	.0135025	.0133055	-0.127429	-0.859	-0.797	307.73	
728	751	0	0.66595D 03	0.0	.0135025	.0133055	-0.127429	-0.859	-0.797	65.20	
729	752	0	0.26659D 03	0.0	.0135025	.0133055	-0.127429	-0.859	-0.797	310.81	
730	753	0	0.16038D 02	0.0	.0085572	.008476	-0.251929	-0.213	-0.244	306.59	
731	754	0	0.40167D 01	0.0	.016213D 03	-0.42147D 03	-0.18465D 05	-0.187577	-0.250	-0.309	61.32
732	755	0	0.28015D 01	0.0	.016213D 03	-0.42147D 03	-0.18465D 05	-0.187577	-0.250	-0.309	311.70
733	756	0	0.40167D 01	0.0	.016213D 03	-0.42147D 03	-0.18465D 05	-0.187577	-0.250	-0.309	304.18
734	757	0	0.12674D 01	0.0	.016213D 03	-0.42147D 03	-0.18465D 05	-0.187577	-0.250	-0.309	71.74
735	758	0	0.40167D 01	0.0	.016213D 03	-0.42147D 03	-0.18465D 05	-0.187577	-0.250	-0.309	320.51
736	759	0	0.12674D 01	0.0	.016213D 03	-0.42147D 03	-0.18465D 05	-0.187577	-0.250	-0.309	71.74
737	760	0	0.40167D 01	0.0	.016213D 03	-0.42147D 03	-0.18465D 05	-0.187577	-0.250	-0.309	307.58
738	761	0	0.14459D 01	0.0	.016213D 03	-0.42147D 03	-0.18465D 05	-0.187577	-0.250	-0.309	61.32
739	762	0	0.46850D 01	0.0	.016213D 03	-0.42147D 03	-0.18465D 05	-0.187577	-0.250	-0.309	311.70
740	763	0	0.49028D 01	0.0	.016213D 03	-0.42147D 03	-0.18465D 05	-0.187577	-0.250	-0.309	304.18
741	764	0	0.49028D 01	0.0	.016213D 03	-0.42147D 03	-0.18465D 05	-0.187577	-0.250	-0.309	71.74
742	765	0	0.49028D 01	0.0	.016213D 03	-0.42147D 03	-0.18465D 05	-0.187577	-0.250	-0.309	320.51
743	766	0	0.49028D 01	0.0	.016213D 03	-0.42147D 03	-0.18465D 05	-0.187577	-0.250	-0.309	71.74
744	767	0	0.49028D 01	0.0	.016213D 03	-0.42147D 03	-0.18465D 05	-0.187577	-0.250	-0.309	307.58
745	768	0	0.49028D 01	0.0	.016213D 03	-0.42147D 03	-0.18465D 05	-0.187577	-0.250	-0.309	61.32
746	769	0	0.49028D 01	0.0	.016213D 03	-0.42147D 03	-0.18465D 05	-0.187577	-0.250	-0.309	310.83
747	770	0	0.49028D 01	0.0	.016213D 03	-0.42147D 03	-0.18465D 05	-0.187577	-0.250	-0.309	309.22
748	771	0	0.49028D 01	0.0	.016213D 03	-0.42147D 03	-0.18465D 05	-0.187577	-0.250	-0.309	61.32
749	772	0	0.49028D 01	0.0	.016213D 03	-0.42147D 03	-0.18465D 05	-0.187577	-0.250	-0.309	312.84
750	773	0	0.49028D 01	0.0	.016213D 03	-0.42147D 03	-0.18465D 05	-0.187577	-0.250	-0.309	61.05
751	774	0	0.49028D 01	0.0	.016213D 03	-0.42147D 03	-0.18465D 05	-0.187577	-0.250	-0.309	61.05
752	775	0	0.49028D 01	0.0	.016213D 03	-0.42147D 03	-0.18465D 05	-0.187577	-0.250	-0.309	61.05
753	776	0	0.49028D 01	0.0	.016213D 03	-0.42147D 03	-0.18465D 05	-0.187577	-0.250	-0.309	61.05
754	777	0	0.49028D 01	0.0	.016213D 03	-0.42147D 03	-0.18465D 05	-0.187577	-0.250	-0.309	61.05
755	778	0	0.49028D 01	0.0	.016213D 03	-0.42147D 03	-0.18465D 05	-0.187577	-0.250	-0.309	61.05
756	779	0	0.49028D 01	0.0	.016213D 03	-0.42147D 03	-0.18465D 05	-0.187577	-0.250	-0.309	61.05
757	780	0	0.49028D 01	0.0	.016213D 03	-0.42147D 03	-0.18465D 05	-0.187577	-0.250	-0.309	61.05
758	781	0	0.49028D 01	0.0	.016213D 03	-0.42147D 03	-0.18465D 05	-0.187577	-0.250	-0.309	61.05
759	782	0	0.49028D 01	0.0	.016213D 03	-0.42147D 03	-0.18465D 05	-0.187577	-0.250	-0.309	61.05
760	783	0	0.49028D 01	0.0	.016213D 03	-0.42147D 03	-0.18465D 05	-0.187577	-0.250	-0.309	61.05
761	784	0	0.49028D 01	0.0	.016213D 03	-0.42147D 03	-0.18465D 05	-0.187577	-0.250	-0.309	61.05
762	785	0	0.49028D 01	0.0	.016213D 03	-0.42147D 03	-0.18465D 05	-0.187577	-0.250	-0.309	61.05
763	786	0	0.49028D 01	0.0	.016213D 03	-0.42147D 03	-0.18465D 05	-0.187577	-0.250	-0.309	61.05
764	787	0	0.49028D 01	0.0	.016213D 03	-0.42147D 03	-0.18465D 05	-0.187577	-0.250	-0.309	61.05
765	788	0	0.49028D 01	0.0	.016213D 03	-0.42147D 03	-0.18465D 05	-0.187577	-0.250	-0.309	61.05
766	789	0	0.49028D 01	0.0	.016213D 03	-0.42147D 03	-0.18465D 05	-0.187577	-0.250	-0.309	61.05
767	790	0	0.49028D 01	0.0	.016213D 03	-0.42147D 03	-0.18465D 05	-0.187577	-0.250	-0.309	61.05
768	791	0	0.49028D 01	0.0	.016213D 03	-0.42147D 03	-0.18465D 05	-0.187577	-0.250	-0.309	61.05
769	792	0	0.49028D 01	0.0	.016213D 03	-0.42147D 03	-0.18465D 05	-0.187577	-0.250	-0.309	61.05

Table 3. Summary of Seasat Greenland Orbit Adjustment (Cont.)

NUM PTS	REV	COEFFICIENTS (2)		TIME (FRAC OF DAY)		ORB. ADJ (CM)		START LAT		END LAT			
		(1)	(3)	310. E	320. E	330. E	310. E	320. E	330. E	310. E	320. E		
1034	803	0.518750	0.3	-0.220400	0.5	.0103806	.0097636	.0090848	1.025	0.979	0.909		
213	0.198470	0.1	0.0	0.0	0.0	.0103806	.0097636	.0090848	0.484	0.191	-0.184		
1147	-0.220130	0.1	0.754210	0.2	-0.251560	0.4	.0195886	.0188514	.0182032	-0.268	-0.252	-0.241	
1168	-0.146350	0.1	0.121700	0.3	0.0	0.180136	0.174211	0.168249	0.749	0.677	0.604		
1150	325	-0.459940	0.1	0.370720	0.3	0.0	0.0203419	0.0198289	0.0182075	0.818	0.421	-0.116	
1161	16	-0.137130	0.1	0.122930	0.2	0.0	0.185274	0.179139	0.173230	-0.322	-0.399	-0.223	
1162	26	-0.507840	0.1	0.613320	0.2	0.0	0.0104461	0.009294	0.0091512	0.628	0.591	0.555	
1163	11	-0.164740	0.1	0.391840	0.3	0.0	0.0216557	0.0205920	0.0192734	0.785	0.734	0.664	
1164	298	-0.214650	0.1	0.329130	0.3	0.0	0.0212425	0.020957	0.0193647	-0.078	-0.366	-0.734	
1175	29	-0.143640	0.1	0.575600	0.1	0.0	0.0212425	0.020957	0.0193647	-0.266	-0.260	-0.255	
1176	16	-0.486570	0.1	0.206450	0.3	-0.923520	0.4	.0190905	0.0163311	0.0178236	0.527	0.619	0.697
1179	164	-0.600690	0.0	0.837580	0.2	0.0	.0137512	0.0123772	0.0104080	0.551	0.436	0.271	
1189	139	-0.327080	0.0	0.516680	0.1	0.0	0.0224876	0.0211495	0.0201458	-0.211	-0.218	-0.223	
1190	12	-0.432100	0.0	0.305390	0.3	0.0	0.196409	0.189039	0.182557	-0.143	0.116	0.329	
1191	59	-0.884750	-0.2	0.516160	0.2	0.0	0.0177201	0.017276	0.0165314	0.951	0.919	0.888	
1193	336	-0.219940	0.1	0.232170	0.3	0.0	0.016253	0.0155554	0.012046	1.196	0.619	0.644	
1204	61	-0.205080	0.0	-0.138460	0.3	0.562830	0.4	0.0203790	0.0195201	0.0188012	-0.279	-0.553	-0.409
1205	34	-0.103280	0.0	0.224100	0.2	0.0	0.0185328	0.0179194	0.0173285	0.519	0.505	0.492	
1206	19	-0.645180	0.0	0.281150	0.3	0.0	0.0103584	0.0097417	0.0096634	0.707	0.714	0.709	
1207	148	-0.113940	0.1	0.190440	0.3	0.0	0.0062596	0.0053859	0.0042671	0.053	0.114	0.327	
1218	40	-0.142100	0.1	0.610060	0.2	0.0	0.0212926	0.0202459	0.0194151	-0.122	-0.186	-0.237	
1219	18	-0.101090	0.1	0.173090	0.3	0.519560	0.4	0.018018	0.0184225	0.0178150	0.344	0.358	0.367
1220	90	-0.513950	0.1	0.550340	0.3	-0.146000	0.4	0.0175168	0.0169233	0.0162992	0.021	-0.036	-0.048
1221	269	-0.357460	0.0	-0.800860	0.2	-0.630320	0.3	0.0081367	0.0073900	0.00664845	-0.336	-0.269	-0.188
1222	129	-0.513240	0.1	0.114540	0.3	0.0	0.0137512	0.0123769	0.0104072	-0.315	-0.472	-0.698	
1232	145	-0.142100	0.1	0.610060	0.2	0.0	0.0224790	0.0211412	0.0201142	-0.110	-0.059	-0.633	
1234	32	-0.321720	0.1	0.211930	0.3	0.0	0.0180161	0.0174237	0.0168274	0.601	0.475	0.349	
1235	13	-0.754680	-0.1	-0.244220	0.3	0.115760	0.5	0.0020146	0.0134694	0.0055824	-0.370	-0.233	-0.063
1236	314	-0.441950	0.1	0.344760	0.3	0.0	0.0146159	0.0135458	0.0120947	0.619	0.251	0.250	
1248	47	-0.246570	0.1	0.152840	0.3	0.0	0.0185311	0.0179177	0.0173267	0.367	0.273	0.183	
1249	20	-0.399660	0.1	0.376260	0.3	-0.223336	0.5	0.0103975	0.0097808	0.0091024	0.371	0.267	0.090
1250	286	-0.261850	0.1	0.376260	0.3	0.0	0.0062554	0.0062626	0.0062626	-0.262	-0.592	-1.125	
1261	32	-0.443260	0.0	-0.806090	0.2	0.0	0.0213306	0.0202841	0.0194533	-0.262	-0.262	-0.262	
1264	172	-0.122620	0.0	-0.194510	0.3	-0.308940	0.3	0.0083339	0.0075872	0.00666815	-0.416	-0.267	-0.087
1265	123	-0.754620	0.0	-0.569810	0.2	0.0	0.0130402	0.0123656	0.0102446	-0.783	-0.914	-0.102	
1275	125	-0.298640	0.1	0.979880	0.2	0.0	0.0224852	0.0211477	0.0201463	-0.953	-0.953	-0.075	
1276	24	-0.484420	0.0	-0.320240	0.3	0.0	0.0197086	0.0189717	0.0183236	-0.953	-0.953	-0.075	
1277	21	-0.492520	0.1	0.354130	0.3	0.0	0.0100460	0.0103806	0.0103806	-0.538	-0.107	-0.296	
1279	342	-0.429203	0.1	0.354100	0.3	0.0	0.0161153	0.0135451	0.0120937	-0.495	0.526	0.012	
1291	3	-0.106060	0.1	0.677510	0.2	0.0	0.0185308	0.0179174	0.0173235	0.195	0.153	0.153	
1293	207	-0.216560	0.1	0.332970	0.3	0.0	0.0062230	0.0053491	0.0042310	-0.094	-0.385	-0.757	
1305	4	-0.199440	0.1	0.155820	0.3	-0.275630	0.4	0.0198101	0.0184217	0.0178162	-0.125	-0.059	-0.104
1306	29	-0.609750	0.1	0.604520	0.3	-0.150380	0.5	0.0175182	0.0169246	0.0163055	-0.123	-0.174	-0.239
1308	130	-0.331060	0.1	0.233090	0.3	0.0	0.0137437	0.0123689	0.010983	-0.107	-0.428	-0.887	
1318	88	-0.393720	0.1	0.195570	0.3	0.0	0.0224794	0.0214210	0.020388	0.459	0.198	0.001	
1320	4	-0.210600	0.1	0.172100	0.3	0.0	0.0180136	0.0174212	0.0168249	0.994	0.892	0.790	
1321	12	-0.954650	0.0	-0.143610	0.3	0.0	0.0099629	0.0092975	0.0085300	-0.202	-0.142	-0.070	
1322	54	-0.548350	0.1	0.444480	0.3	0.0	0.0146240	0.0135536	0.0122021	0.017	0.541	0.104	
1333	5	-0.157610	0.1	0.153430	0.3	0.0	0.0204348	0.0195762	0.0188574	-0.155	-0.382	-0.562	
1336	174	-0.247940	0.1	0.644092	0.3	0.0	0.0061807	0.0053067	0.004875	-0.246	-0.140	-0.633	
1339	207	-0.821390	0.1	0.898780	0.2	0.0	0.0175197	0.0169212	0.0162970	-0.678	-0.595	-0.122	
1341	102	-0.247550	0.1	0.171280	0.3	0.0	0.0137396	0.0123667	0.0120394	-0.358	-0.358	-0.070	
1342	12	-0.603580	0.0	-0.362300	0.1	0.0	0.0224811	0.0211437	0.0201406	-0.604	-0.604	-0.604	
1343	83	-0.322360	0.1	0.286500	0.3	0.0	0.0146226	0.0135522	0.0121005	-0.916	-0.193	-0.193	
1345	239	-0.570340	0.0	-0.106680	0.3	0.0	0.0204367	0.0185781	0.0179771	-0.131	-1.173	-0.213	
1346	14	-0.570510	0.1	0.170541	0.2	0.0	0.0185271	0.0179137	0.0173228	-0.129	0.129	0.214	
1347	3	-0.143610	0.1	0.170541	0.2	0.0	0.0175197	0.0169212	0.0162970	-0.678	-0.595	-0.122	

Table 3. Summary of Seasat Greenland Orbit Adjustment (Cont.)

REV	PTS	(1)	COEFFICIENTS (2)	TIME (FRAC OF DAY) AT 310. E 320. E 330. E	ORB ADJ (M) AT 310. E 320. E 330. E	START LAT	END LAT	END LON
1378	9	-0.11427D 01	0.34356D 03	-0.16952D 05	.0094309 .0088142 .00881358	0.590 0.568 0.530	72.05 304.95 304.95	72.05 304.95 304.95
1379	290	-0.17168D 01	0.21410D 03	0.0	.0061957 .0053247 .0042024	-0.390 -0.577 -0.817	66.30 320.53 320.53	69.92 305.29 305.29
1390	13	-0.37144D 01	0.94408D 05	-0.35734D 05	.0213304 .0202841 .0194535	0.165 0.128 0.128	63.38 309.44 309.44	63.29 309.23 309.23
1391	21	-0.15918D 01	0.13203D 03	-0.26130D 04	.0190881 .0184288 .0178214	-0.024 -0.069 -0.165	72.07 336.31 336.31	69.62 305.36 305.36
1392	11	-0.16143D 01	0.19102D 03	-0.62624D 04	.0175182 .0169246 .0163005	-0.190 -0.175 -0.165	72.07 309.89 309.89	72.02 305.85 305.85
1394	162	-0.32089D 01	0.20203D 03	0.0	.0137462 .0123713 .0104006	-0.432 -0.09 -1.108	60.74 316.55 316.55	64.77 308.07 308.07
1405	2	-0.77553D 00	-0.17995D 02	0.25240D 04	.0197086 .0189718 .0183237	-0.150 -0.208 -0.258	71.88 334.95 334.95	68.15 306.81 306.81
1406	1	-0.23611D 01	0.18187D 03	0.0	.0180110 .0174185 .0168223	0.935 0.827 0.718	71.59 304.90 304.90	71.59 304.90 304.90
1419	10	-0.14899D 01	-0.10068D 01	0.32367D 04	.0204637 .0195851 .0188663	-0.343 -0.446 -0.528	66.57 309.49 309.49	65.87 307.35 307.35
1421	11	-0.22761D 01	0.68265D 03	-0.17976D 05	.0103906 .0097738 .0090954	0.800 0.726 0.629	69.24 334.17 334.17	69.27 334.03 334.03
1422	199	-0.16660D 01	0.27504D 03	0.0	.0062124 .0053385 .0042193	0.043 -0.193 -0.505	66.50 320.55 320.55	67.96 314.77 314.77
1434	2	-0.10974D 00	0.10322D 03	-0.46384D 04	.0190829 .0184236 .0178161	0.171 0.218 0.257	72.07 335.71 335.71	69.66 305.59 305.59
1435	20	-0.22110D 00	0.14817D 03	-0.76433D 04	.0175116 .0169181 .0162940	0.030 0.093 0.164	72.07 309.96 309.96	72.01 305.45 305.45
1437	99	-0.94844D 00	0.76918D 02	0.0	.0137467 .0123660 .0103955	0.108 0.005 -0.149	61.13 315.86 315.86	64.74 308.15 308.15
1447	36	-0.13355D 01	0.40242D 02	0.0	.0224820 .0211445 .0201415	-0.431 -0.485 -0.525	63.68 318.49 318.49	62.16 315.15 315.15
1449	8	-0.14213D 01	0.11859D 03	0.0	.0180139 .0176425 .0168253	-0.713 -0.643 -0.572	71.31 336.19 336.19	71.32 336.07 336.07
1464	7	-0.22649D 01	0.43988D 03	-0.18174D 05	.0102700 .0096533 .0089749	0.337 0.289 0.220	69.28 334.10 334.10	69.26 334.01 334.01
1465	210	-0.20475D 01	0.27582D 03	0.0	.0062213 .0053445 .0042284	-0.332 -0.573 -0.881	66.64 319.49 319.49	69.82 305.89 305.89
1476	17	-0.38678D 01	0.10511D 04	-0.40450D 05	.0213366 .0202901 .0194594	0.145 0.807 1.269	70.51 336.16 336.16	63.17 308.98 308.98
1477	23	-0.16337D 01	0.85370D 02	0.12195D 03	.0190812 .0184219 .0178144	0.040 0.020 -0.074	72.07 336.01 336.01	70.06 308.02 308.02
1478	21	-0.18544D 01	0.12093D 03	-0.29277D 04	.0175200 .0169265 .0163024	-0.634 -0.634 -0.661	72.07 310.10 310.10	72.02 305.76 305.76
1490	70	-0.20399D 01	0.91879D 02	0.92859D 02	.0224781 .0211403 .0201369	0.025 -0.098 -0.190	63.69 318.50 318.50	61.94 314.85 314.85
1491	14	-0.16715D 01	0.44959D 02	0.0	.0197039 .0189669 .0183188	-0.750 -0.785 -0.817	71.88 335.00 335.00	68.87 309.95 309.95
1492	18	-0.36589D 01	0.24738D 03	0.0	.0159736 .0153811 .0147849	0.293 0.146 -0.001	71.25 336.79 336.79	71.62 329.50 329.50
1493	5	-0.98603D 00	0.39922D 02	-0.13840D 04	.00992731 .0099385 .00992731	-0.735 -0.735 -0.747	68.48 329.38 329.38	68.50 329.29 329.29

Table 4. Corrections To Seasat Ice Data Records

CORRECTION ADJUSTMENT	VALUE OR RANGE	MANNER IN WHICH APPLIED		SECTION IN WHICH DOCUMENTED
		TIME	SURFACE HEIGHT	
RETRACKING CORRECTION accounts for lag in tracker response	$-15m < \Delta H_{RET} < 15m$	N/A	(-)	2.1
TIME BIAS accounts for track mode correction	$-7.9451 \times 10^{-2} s$	(+)	N/A	2.2.1
SIGNAL TRAVEL TIME CORRECTION	$-2.67 \times 10^{-3} s$	(+)	N/A	2.2.1
CENTER OF GRAVITY OFFSET adjusts measurement to s/c center of mass	$\sim 6.04 m$	N/A	(-)	2.2.2
IONOSPHERIC REFRACTION CORRECTION accounts for signal delay	$\sim 2-3 cm$	N/A	(+)	2.3.1
TROPOSPHERIC REFRACTION CORRECTION accounts for signal delay	$\sim 1.5-2.5 m$	N/A	(+)	2.3.2
SOLID TIDE removal	$\sim 2-10 cm.$	N/A	(-)	2.4
ORBIT ADJUSTMENT reduces orbit error and references the data to a mean ocean surface	$3m \leq \Delta H_{ORB} \leq 3m$	N/A	(-)	2.5
SLOPE CORRECTION accounts for signal being returned from closest point within satellite footprint	$0m \leq \Delta H_{SLOPE} < 80m$	N/A	(-)	2.6

Table 5. Waveform Data Record Description

General Characteristics:

Record Format	- variable
Record Size (bytes)	- 170 + 4 for IBM record control word
Blocksize (bytes)	- 31842 + 4 for IBM block control word

<u>Bytes</u>	<u>FORTRAN Variable Type</u>	<u>Description</u>
1-8	R*8	Fraction of day past midnight from sensor data record
9-16	R*8	Altimeter range measurement in meters from sensor data record
17-20	R*4	Satellite latitude in degrees from sensor data record
21-24	R*4	Satellite east longitude in degrees from sensor data record
25-28	R*4	Altitude error Δh in meters
29-32	R*4	Altitude rate error Δh in meters/sec
33-36	I*4	Modified Julian Date of observation from sensor data record
37-38	I*2	Significant wave height (H 1/3) in cm.
39-40	I*2	Automatic Gain Control (AGC) in dB
41-166	I*2	Waveform counts
167-168	I*2	Word indicating original data flags



<u>Bits</u>	<u>Value</u>	<u>Description</u>
0-10		Unused
11	1	Not in track mode
12	1	Chirp/cw
13	1	Altimeter error status
14	1	Reacquisition
15	1	Acq/Trk

Table 5. Waveform Data Record Description (Cont.)

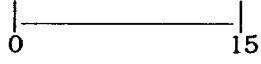
<u>Bytes</u>	<u>FORTRAN Variable Type</u>	<u>Description</u>
169-170	I*2	Retracking status word
		
<u>Bits</u>	<u>Value</u>	<u>Description</u>
0	0	Unused
1	0	Gains and offsets were not applied to waveform counts in plots and in determining β parameters
1	1	Gains and offsets were applied to waveform counts in plots and in determining β parameters
2	0	Specular test not performed or waveform not specularly shaped
2	1	Waveform determined to be specularly shaped
3	0	Status flag from SDR less than or equal to one
3	1	Status flag from SDR greater than one
4	0	Waveform not specularly retracked
4	1	Waveform specularly retracked
5	0	Gains and offsets not applied to waveform count values on WDR's
5	1	Gains and offsets applied to waveform count values on WDR's
6	0	For double waveforms the retracking correction is not calculated from a weighted average of the two leading edges
6	1	For double waveforms the retracking correction is calculated from a weighted average of the two leading edges

Table 5. Waveform Data Record Description

<u>Bytes</u>	<u>FORTRAN Variable</u>	<u>Type</u>		<u>Description</u>
		<u>Bits</u>	<u>Value</u>	<u>Description</u>
169-170 (cont.)	applies to water data	7	0	No problem with leading edge definition of m
		7	1	Waveform not defined well enough to filter, no leading edges or too many leading edges
		8	0	No problem retracking
		8	1	Problem retracking
		9	0	Timing bias was not applied to time tag
		9	1	Timing bias applied to time tag
		10	0	Waveform not retracked
		10	1	Waveform retracked
		11	0	Whole edge retracked
		11	1	Leading edge retracked
		12	0	Ht correction not applied due to h
		12	1	Ht correction applied due to h
		13	0	Attitude seastate correction not applied to h
		13	1	Attitude seastate correction applied to h
		14-15	0	Tracking mode 1
		14-15	1	Tracking mode 2
		14-15	2	Tracking mode 3
		14-15	3	Tracking mode 4

Table 6. Seasat Greenland Geographical Data Base

BIN NUMBER	NUMBER PTS	LAT-LONG SW CORNER	REV (NUMBER PTS)
15	2	59.90 314.00	529(2)
16	19	59.90 315.00	529(12)
17	1	59.90 316.00	285(1)
53	3	60.40 312.00	572(1)
55	1	60.40 314.00	1361(3)
56	7	60.40 315.00	835(1)
57	26	60.40 316.00	146(2)
92	3	60.90 311.00	529(2)
93	54	60.90 312.00	1308(9)
94	124	60.90 313.00	792(3)
95	2	60.90 314.00	400(39)
96	37	60.90 315.00	443(7)
97	21	60.90 316.00	687(6)
98	6	60.90 317.00	1361(10)
131	2	61.40 310.00	558(2)
132	1	61.40 311.00	601(1)
133	28	61.40 312.00	691(19)
134	107	61.40 313.00	146(23)
135	174	61.40 314.00	1189(6)
136	41	61.40 315.00	156(7)
137	11	61.40 316.00	1017(8)
171	2	61.90 310.00	1394(11)
172	24	61.90 311.00	189(39)
173	65	61.90 312.00	1437(6)
314	314	61.90 313.00	443(10)
175	278	61.90 314.00	1265(13)
176	185	61.90 315.00	1351(12)
177	6	61.90 316.00	1394(1)
178	17	61.90 317.00	1476(1)
211	6	62.40 310.00	275(1)
212	59	62.40 311.00	519(1)
213	117	62.40 312.00	759(1)
214	130	62.40 313.00	146(6)
215	117	62.40 314.00	271(1)
216	39	62.40 315.00	558(3)
217	75	62.40 316.00	1265(4)
249	1	62.80 308.00	189(2)
250	12	62.80 309.00	429(2)

Table 6. Seasat Greenland Geographical Data Base (Cont.)

BIN NUMBER	NUMBER PTS	LAT-LONG SW CORNER	REV (NUMBER PTS)
251	39	62.80 310.00	634(20) 716(1) 759(9) 878(19)
252	113	62.80 311.00	515(25) 677(5) 1351(2) 1394(3)
253	302	62.80 312.00	146(7) 228(20) 515(5) 558(12) 677(11) 759(1) 1351(47)
254	129	62.80 313.00	146(13) 271(19) 515(25) 677(5) 1351(2) 1394(3)
255	109	62.80 314.00	1179(4) 1437(1) 232(3) 476(16) 558(33) 720(33) 802(13)
256	54	62.80 315.00	1394(46) 189(5) 1437(58) 232(33) 519(13) 601(67) 720(33) 802(21)
257	87	62.80 316.00	156(5) 275(17) 519(22) 644(16) 763(6) 845(8)
258	50	62.80 317.00	156(22) 400(6) 888(14) 1017(10) 1189(13) 1232(26)
259	92	63.20 309.00	1017(1) 1318(5) 1447(5) 1490(4) 1189(4) 1232(10) 1318(4) 1361(13) 1447(1)
290	66	63.20 310.00	1490(17) 634(1) 673(7) 874(3) 1175(10) 1218(4)
291	168	63.20 311.00	1261(10) 1390(1) 1476(14) 673(7) 874(3) 1175(10) 1218(4)
292	124	63.20 312.00	1228(18) 429(2) 472(14) 634(2) 716(14) 878(10)
293	128	63.20 313.00	1222(2) 1265(4) 472(14) 677(19) 716(9) 878(6)
294	267	63.20 314.00	1179(35) 1222(41) 1265(22) 476(7) 515(20) 720(4) 759(47)
295	138	63.20 315.00	1232(1) 271(45) 476(5) 519(1) 558(46) 720(36)
296	2	63.20 316.00	232(25) 271(7) 476(5) 519(1) 558(5) 763(75) 802(55)
297	84	63.20 317.00	759(8) 275(38) 519(55) 601(55) 763(11) 802(19)
298	36	63.20 318.00	275(1) 562(52) 601(55) 763(11) 802(19)
299	2	63.60 308.00	1490(2) 630(2) 835(1) 874(5) 1351(2) 1394(5) 1175(3)
329	18	63.60 309.00	630(5) 429(13) 673(7) 677(9) 878(3) 1351(2)
330	80	63.60 310.00	189(13) 1218(4) 1222(6) 1261(5) 1308(5) 1351(2)
331	5	63.60 311.00	1394(7) 1437(6) 472(12) 476(6) 716(5) 720(11)
332	47	63.60 312.00	228(9) 232(9) 472(24) 476(6) 716(5) 720(11)
333	84	63.60 313.00	228(5) 271(7) 275(26) 515(51) 519(28) 759(65) 763(38)
334	279	63.60 314.00	271(2) 275(16) 558(66) 562(58) 759(7) 763(29)
335	158	63.60 315.00	558(25) 562(27) 601(14) 802(37)
336	127	63.60 316.00	601(3) 644(2) 644(4) 1189(12) 1236(1) 1275(20) 1318(1) 1361(8) 1447(5)
337	4	63.60 317.00	644(2) 644(4) 1189(12) 1236(1) 1275(20) 1318(1) 1361(8) 1447(5)
338	67	63.60 318.00	644(4) 1447(3) 1490(11) 1494(9) 1179(19) 1308(7) 1351(10) 1394(11)
339	6	64.00 308.00	146(3) 146(3) 878(1) 1179(19) 1308(7) 1351(10) 1394(11)
369	68	64.00 309.00	630(10) 831(3) 1179(19) 1308(7) 1351(10) 1394(11)
370	4	64.00 310.00	1437(8) 189(1) 232(2) 630(14) 720(11) 1261(4)
371	32	64.00 311.00	189(1) 232(15) 673(6) 720(34) 874(18) 1175(16)
372	149	64.00 312.00	1218(32) 1261(12) 472(20) 519(38) 716(41) 763(42)
373	178	64.00 313.00	228(15) 275(12) 472(2) 519(4) 562(47) 716(22)
374	143		763(36)

Table 6. Seasat Greenland Geographical Data Base (Cont.)

BIN NUMBER	NUMBER PTS	LAT-LONG SW CORNER	REV (NUMBER PTS)
375	266	64.00 314.00	515(54)
376	131	64.00 315.00	562(45)
377	112	64.00 316.00	759(4)
378	16	64.00 317.00	806(40)
379	17	64.00 318.00	759(5)
409	70	64.40 308.00	1236(4)
410	3	64.40 309.00	1236(8)
411	13	64.40 310.00	1222(7)
412	99	64.40 311.00	1351(2)
413	120	64.40 312.00	1394(29)
414	210	64.40 313.00	1437(15)
415	183	64.40 314.00	1587(3)
416	189	64.40 315.00	232(2)
417	120	64.40 316.00	476(2)
418	13	64.40 317.00	429(6)
419	7	64.40 318.00	831(9)
450	5	64.80 307.20	519(17)
451	11	64.80 308.00	630(17)
452	5	64.80 308.80	630(17)
453	3	64.80 309.60	629(52)
454	33	64.80 310.40	475(10)
455	45	64.80 311.20	428(23)
456	91	64.80 312.00	228(30)
457	230	64.80 312.80	228(30)
458	31	64.80 313.60	806(43)
459	217	64.80 314.40	160(20)
460	151	64.80 315.20	160(57)
461	77	64.80 316.00	1236(17)
462	12	64.80 316.80	691(12)
463	21	64.80 317.60	122(2)
500	3	65.10 307.20	802(9)
501	30	65.10 308.00	232(15)
502	1	65.10 308.80	257(10)
503	14	65.10 309.60	720(5)
504	19	65.10 310.40	544(1)
505	36	65.10 311.20	275(3)
506	68	65.10 312.00	562(1)
507	73	65.10 312.80	587(2)
508	296	65.10 313.60	605(11)
509	367	65.10 314.40	605(35)
510	254	65.10 315.20	673(4)
511	9	65.10 316.00	160(18)
512	34	65.10 316.80	429(64)
513	5	65.10 317.60	160(58)
514	22	65.10 318.40	1150(35)

Table 6. Seasat Greenland Geographical Data Base (Cont.)

BIN NUMBER	NUMBER PTS	LAT-LONG SW CORNER	REV (NUMBER PTS)
550	4	65.40 307.20	720(4)
551	4	65.40 308.00	720(3)
552	26	65.40 308.80	257(3)
553	10	65.40 309.60	544(2)
554	59	65.40 310.40	562(10)
555	51	65.40 311.20	587(1)
556	56	65.40 312.00	605(12)
557	165	65.40 312.80	587(12)
558	346	65.40 313.60	160(22)
559	475	65.40 314.40	1193(39)
560	32	65.40 315.20	1193(37)
561	92	65.40 316.00	228(8)
562	116	65.40 316.80	228(8)
563	33	65.40 317.60	289(5)
564	38	65.40 318.40	289(10)
566	3	65.40 320.00	802(3)
600	12	65.70 307.20	519(2)
601	7	65.70 308.00	275(3)
603	16	65.70 309.60	257(16)
604	70	65.70 310.40	257(15)
605	53	65.70 311.20	544(15)
606	105	65.70 312.00	160(17)
607	391	65.70 312.80	587(43)
608	313	65.70 313.60	1150(39)
609	50	65.70 314.40	1236(30)
610	173	65.70 315.20	490(22)
611	25	65.70 316.00	429(42)
612	40	65.70 316.80	429(17)
613	7	65.70 317.60	228(5)
614	64	65.70 318.40	289(4)
615	3	65.70 319.20	777(7)
616	8	65.70 320.00	820(3)
618	2	65.70 321.59	558(8)
650	11	66.00 307.20	1035(2)
651	27	66.00 308.00	1204(7)
652	10	66.00 308.80	562(3)
653	25	66.00 309.60	501(2)
654	37	66.00 310.40	257(13)
655	103	66.00 311.20	160(13)
656	212	66.00 312.00	160(9)
657	226	66.00 308.00	1021(29)
658	54	66.00 313.60	1494(7)
659	167	66.00 314.40	587(35)
660	44	66.00 315.20	490(10)
661	196	66.00 316.00	490(47)
662	34	66.00 316.80	429(25)

Table 6. Seasat Greenland Geographical Data Base (Cont.)

BIN NUMBER	NUMBER PTS	LAT-LONG SW CORNER	REV (NUMBER PTS)
663	58	66.00 317.60	228(3)
664	46	66.00 318.40	472(26)
665	109	66.00 319.20	228(5)
666	28	66.00 320.00	472(1)
668	2	66.00 321.59	515(4)
699	15	66.30 306.40	759(69)
700	7	66.30 307.20	515(36)
701	6	66.30 308.00	515(1)
702	29	66.30 308.80	418(9)
703	1	66.30 309.60	601(2)
704	23	66.30 310.40	275(9)
705	95	66.30 311.20	519(2)
706	80	66.30 312.00	763(4)
707	74	66.30 312.80	1032(2)
708	77	66.30 313.60	1204(15)
709	61	66.30 314.40	849(1)
710	210	66.30 315.20	806(6)
711	97	66.30 316.00	1193(11)
712	162	66.30 316.80	1236(1)
713	70	66.30 317.60	1257(1)
714	111	66.30 318.40	501(8)
715	115	66.30 319.20	1501(8)
716	30	66.30 320.00	1236(9)
717	5	66.30 320.79	1279(9)
719	12	66.30 322.39	544(64)
720	6	66.30 323.19	788(10)
749	6	66.60 306.40	490(20)
750	13	66.60 307.20	587(30)
751	10	66.60 308.00	289(14)
752	1	66.60 308.80	630(40)
753	34	66.60 309.60	289(56)
754	16	66.60 310.40	630(36)
756	43	66.60 312.00	576(19)
757	58	66.60 312.80	429(38)
758	116	66.60 313.60	576(17)
759	176	66.60 314.40	429(38)
760	126	66.60 315.20	619(53)
761	125	66.60 316.00	1164(1)
762	108	66.60 316.80	1250(5)
763	114	66.60 317.60	515(15)
764	57	66.60 318.40	174(35)
765	51	66.60 319.20	1164(1)
766	44	66.60 320.00	418(2)
767	2	66.60 320.79	429(26)
768	11	66.60 321.59	619(6)
770	11	66.60 323.19	418(4)
771	5	66.60 323.99	1465(2)
772	1	66.60 324.79	1465(1)

Table 6. Seasat Greenland Geographical Data Base (Cont.)

BIN NUMBER	NUMBER PTS	LAT-LONG SW CORNER	REV (NUMBER PTS)
799	6	66.90 306.40	573(3)
800	32	66.90 307.20	573(32)
801	6	66.90 308.00	648(2)
802	43	66.90 308.80	616(10)
803	25	66.90 309.60	616(1)
804	35	66.90 310.40	659(4)
805	38	66.90 311.20	659(5)
806	26	66.90 312.00	690(18)
807	137	66.90 312.80	257(24)
808	132	66.90 313.60	257(58)
809	82	66.90 314.40	544(25)
810	152	66.90 315.20	544(29)
811	148	66.90 316.00	587(62)
812	117	66.90 316.80	174(10)
813	361	66.90 317.60	1035(4)
814	52	66.90 318.40	174(49)
815	150	66.90 319.20	174(48)
816	121	66.90 320.00	228(22)
817	51	66.90 320.79	228(12)
818	9	66.90 321.59	515(5)
819	16	66.90 322.39	271(10)
820	6	66.90 323.99	558(2)
821	3	66.90 324.79	601(2)
822	8	66.90 325.59	877(8)
823	7	67.20 306.50	530(7)
854	6	67.20 307.50	530(6)
855	5	67.20 307.50	849(5)
856	15	67.20 308.00	573(15)
857	12	67.20 308.50	1150(1)
858	14	67.20 309.00	1494(4)
859	17	67.20 311.00	490(5)
863	16	67.20 311.50	659(7)
864	19	67.20 312.00	289(7)
865	66	67.20 312.50	289(31)
866	19	67.20 313.00	777(19)
867	18	67.20 313.50	576(38)
868	38	67.20 314.00	257(15)
869	59	67.20 314.50	501(31)
870	45	67.20 315.00	257(15)
871	52	67.20 315.50	544(32)
872	45	67.20 316.00	544(22)
873	54	67.20 316.50	174(18)
874	184	67.20 316.50	418(29)
875	199	67.20 317.00	1250(8)
876	62	67.20 317.50	174(18)
877	68	67.20 318.00	461(2)
878	74	67.20 318.50	461(12)
879	12	67.20 319.00	630(10)
880	49	67.20 319.50	673(8)

Table 6. Seasat Greenland Geographical Data Base (Cont.)

BIN NUMBER	NUMBER PTS	LAT-LONG SW CORNER	REV (NUMBER PTS)
881	38	67.20 320.00	260(3) 429(12) 673(10) 874(13)
882	24	67.20 320.50	429(19) 547(5) 673(10) 874(13)
883	4	67.20 321.00	547(4) 472(6) 716(7) 791(7)
884	30	67.20 321.50	472(6) 716(3) 791(12)
885	31	67.20 322.00	228(13) 472(3) 791(12)
886	12	67.20 322.50	228(13) 472(3) 791(12)
887	3	67.20 323.00	590(12) 515(1) 590(2)
888	2	67.20 323.50	515(1) 590(2)
892	23	67.20 325.50	759(2) 432(5) 1221(3) 1264(15)
934	4	67.40 306.50	648(2) 849(2)
935	6	67.40 307.00	530(2) 849(4)
936	24	67.40 307.50	286(2) 530(8) 1021(10) 1279(1)
937	52	67.40 308.00	530(6) 774(16) 1021(4) 1150(1) 1322(3)
938	10	67.40 308.50	1494(6) 1236(6) 1236(2) 1322(2) 1322(17)
940	1	67.40 309.50	573(1)
941	3	67.40 310.00	616(3)
942	4	67.40 310.50	616(4)
944	21	67.40 311.00	289(16) 659(5) 777(24) 1032(15)
945	44	67.40 312.00	289(5) 777(5) 1032(6)
946	22	67.40 312.50	576(11) 576(37)
947	37	67.40 313.00	576(22) 576(37)
948	2	67.40 313.50	576(1) 576(37)
949	1	67.40 314.00	820(1)
950	34	67.40 314.50	501(2) 619(23) 820(9)
951	62	67.40 315.00	257(39) 501(23) 820(9)
952	61	67.40 315.50	257(39) 501(23) 820(9)
953	368	67.40 316.00	174(36) 418(13) 501(4) 662(25)
954	332	67.40 316.50	1207(26) 1250(26) 1293(27) 1336(27) 1422(26)
955	51	67.40 317.00	1465(30) 418(5) 544(40) 788(8) 1035(25) 1164(30)
956	56	67.40 317.50	1465(30) 418(5) 544(40) 788(8) 1035(25) 1164(30)
957	36	67.40 318.00	461(22) 587(23) 788(11)
958	17	67.40 318.50	461(11) 587(35)
959	88	67.40 319.00	504(8) 631(9)
960	34	67.40 319.50	260(22) 504(3) 630(31) 630(26) 830(26)
962	33	67.40 320.50	429(6) 547(4) 673(7) 874(16)
963	35	67.40 321.00	429(14) 673(10) 791(11)
964	35	67.40 321.50	590(32) 791(22)
965	23	67.40 322.00	590(19) 716(4)
966	42	67.40 322.50	228(9) 472(24) 716(9)
967	43	67.40 323.00	633(28) 834(15)
968	2	67.40 323.50	1221(22)
970	2	67.40 324.50	834(22)
971	2	67.40 325.00	558(22)
1014	1	67.60 306.50	160(1)
1015	21	67.60 307.00	160(5) 243(3) 1150(1) 1279(3)
1016	3	67.60 307.50	1021(2)
1017	9	67.60 308.00	530(9)
1018	16	67.60 308.50	530(6) 774(10)

Table 6. Seasat Greenland Geographical Data Base (Cont.)

BIN NUMBER	NUMBER PTS	LAT-LONG SW CORNER	REV (NUMBER PTS)
1019	10	67.60 309.00	774(10)
1020	5	67.60 309.50	490(1)
1021	7	67.60 310.00	573(4)
1023	40	67.60 311.00	573(7)
1024	18	67.60 311.50	289(2)
1025	5	67.60 312.00	616(1)
1026	7	67.60 312.50	576(5)
1027	19	67.60 313.00	576(2)
1028	15	67.60 313.50	659(3)
1029	17	67.60 314.00	619(1)
1030	6	67.60 314.50	659(12)
1031	137	67.60 315.00	619(6)
1032	454	67.60 315.50	619(3)
1033	157	67.60 316.00	1032(2)
1034	37	67.60 316.50	1032(17)
1035	59	67.60 317.00	418(32)
1036	46	67.60 317.50	1379(8)
1037	80	67.60 318.00	1257(18)
1038	73	67.60 318.50	1164(26)
1039	20	67.60 319.00	1164(1)
1040	40	67.60 319.50	1164(39)
1041	49	67.60 320.00	1164(17)
1042	9	67.60 320.50	1422(39)
1043	35	67.60 321.00	1422(39)
1044	32	67.60 321.50	1465(37)
1045	43	67.60 322.00	1465(37)
1046	24	67.60 322.50	1465(39)
1047	17	67.60 323.00	1465(39)
1048	4	67.60 323.50	1465(39)
1049	2	67.60 324.00	1465(39)
1053	10	67.60 324.50	1465(39)
1093	4	67.80 306.00	1231(10)
1094	22	67.80 306.50	1279(4)
1095	3	67.80 307.00	1150(1)
1097	1	67.80 308.00	1279(1)
1098	1	67.80 308.50	1279(1)
1099	3	67.80 309.00	1279(1)
1100	10	67.80 309.50	1279(1)
1101	27	67.80 310.00	1279(1)
1102	22	67.80 310.50	1279(1)
1103	15	67.80 311.00	1279(1)
1104	7	67.80 311.50	1279(1)
1105	9	67.80 312.00	1279(1)
1106	11	67.80 312.50	1279(1)
1107	37	67.80 313.00	1279(1)
1108	17	67.80 313.50	1279(1)
1109	212	67.80 314.00	1279(1)
1110	217	67.80 314.50	1279(1)

Table 6. Seasat Greenland Geographical Data Base (Cont.)

BIN NUMBER	NUMBER PTS	LAT-LONG SW CORNER	REV (NUMBER PTS)
11111	175	67.80 315.00	174(16) 418(7) 1035(1) 1164(23) 1207(18) 1250(19)
11112	19	67.80 315.50	1293(18) 1336(15) 1379(21) 1422(15) 1465(22)
11113	53	67.80 316.00	461(19) 501(14) 501(39)
11114	79	67.80 316.50	257(38) 461(2) 501(39)
11115	61	67.80 317.00	257(22) 260(10) 501(7) 504(22)
11116	87	67.80 317.50	260(39) 504(29) 544(19)
11117	57	67.80 318.00	260(11) 544(38) 788(8)
11118	62	67.80 318.50	544(3) 547(28) 788(31)
11119	55	67.80 319.00	547(32) 587(10) 788(13)
11120	25	67.80 319.50	587(23) 791(2)
11122	10	67.80 320.00	630(7) 831(5)
11123	23	67.80 321.00	630(11) 831(12)
11124	26	67.80 321.50	633(12) 834(8)
11125	47	67.80 322.00	633(16) 673(12) 874(16)
11126	56	67.80 322.50	429(35) 673(6) 676(7) 874(12)
11127	21	67.80 323.00	429(42) 877(22) 1264(15)
11128	55	67.80 323.50	432(33) 716(2)
11131	4	67.80 325.00	231(4) 271(1)
11132	30	67.80 325.50	271(19) 515(9) 759(2)
11133	35	67.80 326.00	518(5) 518(1) 558(3)
11134	5	67.80 326.50	274(1)
11135	8	67.80 327.00	558(8)
11174	1	68.00 306.00	1405(1)
11176	11	68.00 307.50	2000(1)
11177	11	68.00 308.00	490(1)
11180	19	68.00 309.00	289(4) 576(5) 774(5)
11181	31	68.00 310.00	530(4) 576(5) 774(4)
11182	11	68.00 311.00	573(2) 576(11)
11183	13	68.00 311.50	573(14)
11184	14	68.00 312.00	619(5) 619(4) 662(11)
11185	5	68.00 312.50	616(9) 616(2) 662(18)
11186	13	68.00 313.00	418(1) 662(10) 1035(18)
11187	14	68.00 313.50	418(3) 418(15)
11188	59	68.00 314.00	174(3) 418(15)
11189	72		1250(12)
11190	22	68.00 314.50	461(4) 659(18)
11191	8	68.00 315.00	461(6) 1032(2)
11192	9	68.00 315.50	461(9)
11193	3	68.00 316.00	504(3)
11194	70	68.00 316.50	260(33) 504(37)
11195	89	68.00 317.00	257(16) 260(28) 501(30)
11196	82	68.00 317.50	257(38) 501(31) 547(13)
11197	43	68.00 318.00	257(7) 547(36)
11198	69	68.00 318.50	544(32) 547(8) 791(29)
11199	65	68.00 319.00	544(26) 590(16) 788(23)
1200	74	68.00 319.50	587(23) 590(38) 788(34)
1201	24	68.00 320.00	587(23) 590(1)
1202	16	68.00 320.50	587(8) 834(8)
1203	14	68.00 321.00	831(11) 834(3)
1204	52	68.00 321.50	831(19) 877(2)
1205	64	68.00 322.00	832(13) 676(1) 877(9) 1221(23)

Table 6. Seasat Greenland Geographical Data Base (Cont.)

BIN NUMBER	NUMBER PTS	LAT-LONG SW CORNER		REV (NUMBER PTS)	
		68.00	322.50	673(7)	676(13)
1206	79	68.00	322.50	1264(10)	673(7)
1207	72	68.00	323.00	429(17)	432(7)
1208	27	68.00	323.50	231(3)	475(11)
1209	29	68.00	324.00	231(20)	475(6)
1210	8	68.00	324.50	472(2)	716(6)
1211	5	68.00	325.50	515(5)	
1212	5	68.00	326.00	762(3)	762(6)
1213	9	68.00	326.50	271(6)	
1214	6	68.00	328.50	271(6)	
1258	9	68.20	308.50	777(9)	
1259	8	68.20	309.00	777(8)	
1260	8	68.20	309.50	243(8)	
1261	2	68.20	310.00	576(2)	
1262	8	68.20	310.50	286(3)	
1263	10	68.20	311.00	286(4)	
1264	1	68.20	311.50	286(1)	
1265	24	68.20	312.00	573(24)	
1266	25	68.20	312.50	174(7)	418(9)
1267	55	68.20	313.00	174(5)	418(11)
1268	23	68.20	313.50	1207(1)	1250(11)
1269	41	68.20	314.00	461(29)	616(12)
1270	40	68.20	314.50	461(28)	659(12)
1271	46	68.20	315.00	659(33)	1032(13)
1272	75	68.20	315.50	1032(13)	1032(30)
1273	44	68.20	316.00	260(35)	1032(9)
1274	5	68.20	316.50	260(4)	547(1)
1275	37	68.20	317.00	547(37)	547(24)
1276	54	68.20	317.50	501(7)	791(23)
1277	107	68.20	318.00	257(30)	501(35)
1278	89	68.20	318.50	257(32)	501(18)
1279	30	68.20	319.00	544(11)	590(19)
1280	62	68.20	319.50	544(11)	788(2)
1281	61	68.20	320.00	544(14)	633(7)
1282	59	68.20	320.50	587(16)	788(23)
1283	52	68.20	321.00	587(32)	877(20)
1284	36	68.20	321.50	432(16)	587(9)
106	68	68.20	322.00	432(24)	630(19)
1285	71	68.20	322.50	475(6)	630(34)
1286	85	68.20	323.00	231(28)	475(53)
1287	28	68.20	323.50	231(23)	475(5)
1288	8	68.20	324.00	429(5)	518(1)
1289	10	68.20	324.50	274(1)	518(9)
1290	14	68.20	325.00	472(3)	716(1)
1291	34	68.20	325.50	472(22)	561(10)
1292	44	68.20	327.00	805(9)	716(2)
1293	2	68.40	309.00	200(1)	688(1)
1339	22	68.40	310.00	243(8)	
1341	8	68.40	310.50	243(9)	619(13)
1342	22	68.40	311.50	174(2)	286(8)
1344	16	68.40	312.00	174(16)	418(9)
1345	40	68.40	312.50	174(3)	418(3)
1346	20	68.40	313.00	573(7)	573(3)
1347	7	68.40	313.50		

Table 6. Seasat Greenland Geographical Data Base (Cont.)

BIN NUMBER	NUMBER PTS	LAT-LONG SW CORNER	REV (NUMBER PTS)
1348	5	68.40 313.50	461(1)
1349	10	68.40 314.00	573(4)
1350	12	68.40 314.50	461(1)
1351	65	68.40 315.00	616(9)
1352	31	68.40 315.50	260(2)
1353	27	68.40 316.00	260(3)
1354	63	68.40 316.50	504(22)
1355	34	68.40 317.00	547(16)
1356	43	68.40 317.50	547(3)
1357	32	68.40 318.00	1032(27)
1358	40	68.40 318.50	590(29)
1359	143	68.40 319.00	257(5)
1360	53	68.40 319.50	501(36)
1361	27	68.40 320.00	257(22)
1362	106	68.40 320.50	544(23)
1363	48	68.40 321.00	564(32)
1364	29	68.40 321.50	676(3)
1365	94	68.40 322.00	778(13)
1366	110	68.40 322.50	788(2)
1367	36	68.40 323.00	231(9)
1368	33	68.40 323.50	475(19)
1369	35	68.40 324.00	274(32)
1370	6	68.40 324.50	274(3)
1371	9	68.40 325.00	429(1)
1372	5	68.40 325.50	561(6)
1373	1	68.40 326.00	673(5)
1379	23	68.40 329.00	716(27)
1380	3	68.40 329.50	558(9)
1415	2	68.60 307.00	1321(3)
1416	1	68.60 307.50	777(2)
1419	9	68.60 309.00	777(1)
1421	6	68.60 310.00	619(2)
1422	1	68.60 310.50	200(2)
1423	25	68.60 311.00	662(1)
1424	38	68.60 311.50	174(3)
1425	10	68.60 312.00	174(19)
1426	6	68.60 312.50	286(5)
1427	53	68.60 313.00	461(4)
1428	57	68.60 313.50	286(20)
1429	34	68.60 314.00	260(4)
1430	55	68.60 314.50	573(6)
1431	35	68.60 315.00	547(5)
1432	36	68.60 315.50	547(9)
1433	44	68.60 316.00	547(4)
1434	28	68.60 316.50	547(8)
1435	70	68.60 317.00	590(22)
1436	7	68.60 317.50	659(36)
1437	63	68.60 318.00	590(5)
1438	56	68.60 318.50	633(27)
1439	25	68.60 319.00	633(36)
1440	151	68.60 319.50	633(1)
1441	165	68.60 320.00	257(15)
1442	21	68.60 320.50	432(35)

Table 6. Seasat Greenland Geographical Data Base (Cont.)

BIN NUMBER	NUMBER PTS	LAT-LONG SW CORNER		REV (NUMBER PTS)	
		15	15	15	15
1443	68.60	321.00	231(11)	544(4)	544(2)
1444	68.60	321.50	231(27)	475(9)	719(28)
1446	68.60	322.50	518(28)	587(24)	788(3)
1447	68.60	323.00	518(5)	587(25)	762(1)
1448	68.60	323.50	630(4)	831(3)	
1449	68.60	324.00	561(6)	630(15)	
1450	68.60	324.50	630(5)	805(10)	874(5)
1452	68.60	325.50	716(4)	1020(4)	
1456	68.60	327.50	271(1)		
1458	68.60	328.50	515(1)		
1459	68.60	330.00	489(7)		
1461	68.60	331.00	802(2)		
1463	68.60	332.00	776(8)		
1465	68.60	308.50	645(3)		
1498	68.80	309.00	401(13)	645(1)	889(2)
1499	68.80	309.50	401(3)	662(2)	
1500	68.80	310.00	200(5)	444(3)	1190(5)
1501	68.80	310.50	174(5)	662(16)	1491(6)
1502	68.80	310.50	1164(7)	200(12)	688(3)
			1250(3)	418(3)	1035(9)
1503	68.80	311.00	280(10)		
1504	68.80	311.50	243(4)		
1505	68.80	312.00	243(5)		
1506	68.80	312.50	243(2)		
1507	68.80	313.00	260(13)		
1508	68.80	313.50	260(13)		
1509	68.80	314.00	774(1)		
1510	68.80	314.50	547(13)	573(2)	791(2)
1511	68.80	315.00	573(9)	791(3)	
1512	68.80	315.50	590(12)	791(22)	
1513	68.80	316.00	590(32)	616(20)	834(5)
1514	68.80	316.50	590(11)	616(7)	
1515	68.80	317.00	633(11)	834(31)	
1516	68.80	317.50	633(27)	659(15)	834(10)
1517	68.80	318.00	633(32)	659(24)	1032(3)
1518	68.80	318.50	633(17)	676(23)	877(2)
1519	68.80	319.00	432(32)	676(35)	1221(12)
1520	68.80	319.50	432(15)	676(4)	719(2)
1521	68.80	320.00	231(7)	719(25)	
1522	68.80	320.50	231(35)	257(21)	475(3)
1523	68.80	321.00	231(23)	257(13)	475(3)
1524	68.80	321.50	257(4)	274(11)	518(23)
1525	68.80	322.00	518(4)	518(35)	762(3)
1526	68.80	322.50	544(3)	544(3)	788(1)
1527	68.80	323.00	561(17)		
1528	68.80	324.00	587(2)		
1529	68.80	324.50	831(1)		
1530	68.80	325.00	630(5)		
1531	68.80	325.50	831(2)		
1532	68.80	326.00	673(4)		
1533	68.80	326.50	673(2)		
1534	68.80	327.00	891(4)		
1535	68.80	327.50	690(4)		
1536					

Table 6. Seasat Greenland Geographical Data Base (Cont.)

BIN NUMBER	NUMBER PTS	LAT-LONG SW CORNER	REV (NUMBER PTS)
1537	3	68.80 328.00	228(3)
1538	1	68.80 328.50	228(1)
1540	1	68.80 329.50	515(1)
1541	1	68.80 330.00	271(1)
1543	20	68.80 331.00	776(20)
1579	10	69.00 309.00	418(5)
1580	19	69.00 309.50	662(5)
1581	3	69.00 310.00	645(3)
1582	5	69.00 310.50	1276(5)
1583	21	69.00 311.00	444(5)
1584	10	69.00 311.50	444(2)
1585	29	69.00 312.00	200(11)
1586	11	69.00 312.50	243(4)
1588	20	69.00 313.50	243(5)
1589	15	69.00 314.00	547(14)
1590	13	69.00 314.50	547(8)
1591	16	69.00 315.00	286(12)
1592	23	69.00 315.50	286(6)
1593	41	69.00 316.00	573(19)
1594	26	69.00 316.50	616(34)
1595	39	69.00 317.00	616(25)
1596	77	69.00 317.50	432(15)
1597	92	69.00 318.00	432(33)
1598	72	69.00 318.50	432(18)
1599	92	69.00 319.00	231(6)
1600	98	69.00 319.50	231(32)
1601	35	69.00 320.00	231(26)
1602	34	69.00 320.50	274(10)
1603	78	69.00 321.00	274(34)
1604	96	69.00 321.50	274(24)
1605	48	69.00 322.00	257(3)
1606	33	69.00 322.50	561(33)
1607	8	69.00 323.00	561(8)
1608	3	69.00 323.50	561(8)
1609	1	69.00 324.00	788(12)
1611	2	69.00 325.00	848(2)
1612	16	69.00 326.50	831(7)
1613	2	69.00 326.50	630(2)
1614	6	69.00 326.50	446(6)
1615	3	69.00 327.00	874(3)
1616	7	69.00 327.50	673(6)
1617	10	69.00 328.00	874(3)
1618	11	69.00 328.50	429(7)
1619	4	69.00 329.00	245(11)
1620	5	69.00 329.50	228(4)
1621	13	69.00 330.00	776(13)
1622	15	69.00 330.50	776(5)
1624	1	69.00 331.50	759(1)
1625	16	69.00 332.00	558(16)
1659	24	69.20 309.00	461(42)
1662	19	69.20 310.50	846(19)
1663	46	69.20 311.00	260(9)
1664	31	69.20 311.50	260(9)
			401(3)
			401(3)
			889(6)
			1018(7)
			645(10)
			1190(3)
			846(17)
			1164(7)
			803(13)
			1020(2)
			874(3)
			489(3)
			716(3)

Table 6. Seasat Greenland Geographical Data Base (Cont.)

BIN NUMBER	NUMBER PTS	LAT-LONG SW CORNER	REV (NUMBER PTS)
1665	36	69.20 312.00	200(4) 688(4)
1666	34	69.20 312.50	200(2) 547(16)
1667	23	69.20 313.00	200(13) 688(2)
1668	24	69.20 313.50	791(24) 688(2)
1669	12	69.20 314.00	243(10) 590(2)
1670	1	69.20 314.50	243(1) 444(14)
1671	9	69.20 315.00	286(16) 633(7)
1672	48	69.20 315.50	286(14) 633(2)
1673	91	69.20 316.00	286(14) 633(31)
1674	69	69.20 316.50	432(9) 676(27)
1675	69	69.20 317.00	432(6) 676(34)
1676	33	69.20 317.50	432(19) 573(2)
1677	72	69.20 318.00	231(8) 616(16)
1678	101	69.20 318.50	231(34) 475(7)
1679	45	69.20 319.00	231(28) 659(72)
1680	61	69.20 319.50	274(34) 518(33)
1681	153	69.20 320.00	274(34) 518(33)
1682	95	69.20 320.50	274(24) 518(12)
1683	27	69.20 321.00	561(27) 762(32)
1684	35	69.20 321.50	561(34) 762(32)
1685	11	69.20 322.00	561(9) 805(1)
1689	12	69.20 324.00	647(12) 805(2)
1690	6	69.20 324.50	891(6) 848(1)
1691	1	69.20 325.00	788(1) 788(3)
1692	6	69.20 325.50	587(2) 1020(1)
1693	7	69.20 326.00	587(7) 788(3)
1694	1	69.20 326.50	831(1) 831(9)
1695	19	69.20 327.00	489(10) 630(5)
1696	18	69.20 327.50	245(9) 630(5)
1697	13	69.20 328.00	245(52) 629(2)
1698	15	69.20 328.50	673(13) 673(5)
1699	14	69.20 329.00	288(12) 776(4)
1700	12	69.20 329.50	716(12) 776(12)
1701	11	69.20 330.00	228(22) 472(10)
1702	6	69.20 330.50	228(12) 819(4)
1703	7	69.20 331.00	558(22) 1421(11)
1707	7	69.20 333.00	802(22) 1464(7)
1708	2	69.20 333.50	802(22) 1464(7)
1709	19	69.20 334.00	460(12) 1464(7)
1710	14	69.20 334.50	460(12) 1464(7)
1734	20	69.40 307.00	662(42) 1164(7)
1735	2	69.40 307.50	174(22) 1164(7)
1736	5	69.40 309.00	559(52) 1164(7)
1739	11	69.40 310.00	260(52) 1164(7)
1741	11	69.40 311.00	547(72) 846(42)
1743	17	69.40 311.50	645(32) 846(11)
1744	52	69.40 312.00	547(7) 791(3)
1745	24	69.40 312.50	401(22) 645(3)
1746	30	69.40 313.00	401(22) 889(7)
1747	29	69.40 313.50	444(62) 688(13)
1748	15	69.40 314.00	200(42) 590(10)
1749	17	69.40 314.50	243(42) 834(8)
1750			633(12) 834(1)

Table 6. Seasat Greenland Geographical Data Base (Cont.)

BIN NUMBER	NUMBER PTS	LAT-LONG SW CORNER	REV (NUMBER PTS)
1751	15	69.40 315.00	243(15)
1752	63	69.40 315.50	243(13)
1753	61	69.40 316.00	286(15)
1754	77	69.40 316.50	432(26)
1755	78	69.40 317.00	231(9)
1756	65	69.40 317.50	475(23)
1757	65	69.40 318.00	231(26)
1758	17	69.40 318.50	518(9)
1759	73	69.40 319.00	274(15)
1760	70	69.40 319.50	274(22)
1761	42	69.40 320.00	561(32)
1762	80	69.40 320.50	561(34)
1763	104	69.40 321.00	561(7)
1764	62	69.40 321.50	659(1)
1767	3	69.40 323.00	805(33)
1768	9	69.40 323.50	805(33)
1769	8	69.40 324.00	616(4)
1770	12	69.40 324.50	616(4)
1771	14	69.40 325.00	446(8)
1772	8	69.40 325.50	544(7)
1773	19	69.40 326.00	489(9)
1774	41	69.40 326.50	489(2)
1775	5	69.40 327.00	489(1)
1776	24	69.40 327.50	831(24)
1777	28	69.40 328.00	288(11)
1778	6	69.40 328.50	288(1)
1780	2	69.40 329.00	429(2)
1781	17	69.40 330.00	429(13)
1782	2	69.40 330.50	819(4)
1783	4	69.40 332.00	1034(2)
1785	2	69.40 333.50	460(4)
1788	2	69.40 334.00	460(2)
1789	2	69.40 334.50	558(2)
1790	2	69.40 335.00	1391(5)
1814	6	69.60 305.20	1434(1)
1815	5	69.60 305.60	186(1)
1816	2	69.60 306.00	186(1)
1817	11	69.60 306.40	1336(1)
1818	17	69.60 306.80	1336(3)
1822	2	69.60 308.40	516(2)
1823	2	69.60 308.80	504(2)
1824	10	69.60 309.20	260(5)
1825	15	69.60 309.60	504(5)
1826	8	69.60 310.00	559(8)
1828	6	69.60 310.80	547(6)
1829	6	69.60 311.20	791(6)
1830	5	69.60 311.60	791(5)
1832	7	69.60 312.40	590(1)
1833	13	69.60 312.80	645(8)
1834	6	69.60 313.20	889(6)
1835	11	69.60 313.60	633(3)
1836	4	69.60 314.00	633(4)
1837	18	69.60 314.40	200(4)
1838	9	69.60 314.80	200(1)

Table 6. Seasat Greenland Geographical Data Base (Cont.)

BIN NUMBER	NUMBER PTS	LAT-LONG SW CORNER	REV (NUMBER PTS)
1839	18	69.60 315.20	432(12)
1841	4	69.60 316.00	243(4)
1842	37	69.60 316.40	475(17)
1843	51	69.60 316.80	231(16)
1844	6	69.60 317.20	231(6)
1845	12	69.60 317.60	286(3)
1846	32	69.60 318.00	274(1)
1847	51	69.60 318.40	518(26)
1848	16	69.60 318.80	518(11)
1849	10	69.60 319.20	573(14)
1850	26	69.60 319.60	561(10)
1851	23	69.60 320.00	561(26)
1852	41	69.60 320.40	616(15)
1853	7	69.60 320.79	805(17)
1854	6	69.60 321.19	659(6)
1855	18	69.60 321.59	659(17)
1856	28	69.60 321.99	647(4)
1857	33	69.60 322.39	659(5)
1858	14	69.60 322.79	647(21)
1859	3	69.60 323.59	891(14)
1860	3	69.60 324.39	646(3)
1862	6	69.60 326.39	257(3)
1867	15	69.60 326.79	544(5)
1868	7	69.60 327.19	788(7)
1869	16	69.60 327.59	587(7)
1870	1	69.60 328.79	587(1)
1873	5	69.60 329.59	630(5)
1875	7	69.60 330.59	819(7)
1877	11	69.60 330.79	429(2)
1878	11	69.60 330.79	429(1)
1884	2	69.60 333.19	460(2)
1885	1	69.60 333.59	271(1)
1886	4	69.60 333.99	503(4)
1890	1	69.60 335.59	802(1)
1891	1	69.60 335.99	802(1)
1894	5	69.70 305.20	662(5)
1914	20	69.70 306.00	174(2)
1916	7	69.70 306.40	1336(7)
1917	2	69.70 307.20	461(1)
1919	2	69.70 307.60	473(1)
1920	12	69.70 308.80	504(2)
1923	2	69.70 309.20	260(3)
1924	3	69.70 310.40	791(5)
1927	5	69.70 310.80	559(3)
1928	5	69.70 311.60	590(2)
1930	2	69.70 312.80	633(18)
1933	19	69.70 313.20	633(18)
1934	28	69.70 313.60	645(10)
1935	2	69.70 314.00	846(1)
1936	19	69.70 314.40	676(2)
1937	35	69.70 314.80	846(1)
1938	17	69.70 315.20	432(3)
1939	14	69.70 315.60	444(9)
1940	9	69.70 316.00	200(1)
1941	57	69.70 316.00	475(2)

Table 6. Seasat Greenland Geographical Data Base (Cont.)

BIN NUMBER	NUMBER PTS	LAT-LONG SW CORNER	REV (NUMBER PTS)
1942	22	69.70 316.40	231(5)
1943	17	69.70 316.80	243(3)
1944	11	69.70 317.20	518(11)
1945	56	69.70 317.60	274(26)
1946	40	69.70 318.00	518(24)
1947	5	69.70 318.40	762(6)
1948	21	69.70 318.80	774(17)
1949	22	69.70 319.20	573(9)
1950	24	69.70 319.60	805(15)
1951	26	69.70 320.00	604(4)
1952	11	69.70 320.40	805(22)
1953	22	69.70 320.79	616(11)
1955	19	69.70 321.59	616(22)
1956	39	69.70 321.99	647(15)
1957	64	69.70 322.39	647(18)
1958	43	69.70 322.79	659(16)
1959	16	69.70 323.19	891(10)
1960	23	69.70 323.59	446(23)
1963	6	69.70 324.79	489(6)
1965	7	69.70 325.59	257(3)
1967	3	69.70 326.39	532(3)
1968	7	69.70 326.79	288(1)
1969	16	69.70 327.19	544(2)
1970	11	69.70 327.59	776(1)
1974	8	69.70 329.19	575(1)
1978	15	69.70 330.79	819(1)
1979	14	69.70 331.19	417(1)
1981	2	69.70 331.99	629(1)
1982	7	69.70 332.39	460(2)
1986	1	69.70 333.39	460(2)
1992	1	69.70 333.99	503(1)
2014	1	69.80 305.20	802(1)
2015	11	69.80 305.60	662(1)
2016	11	69.80 306.40	1336(5)
2017	4	69.80 306.80	875(4)
2018	12	69.80 306.80	461(12)
2026	6	69.80 310.00	272(6)
2027	1	69.80 310.40	791(1)
2028	8	69.80 310.80	559(8)
2029	17	69.80 311.20	559(12)
2031	7	69.80 312.00	834(7)
2032	16	69.80 312.40	633(8)
2033	4	69.80 312.80	633(8)
2034	1	69.80 313.20	877(1)
2035	26	69.80 313.60	676(13)
2036	32	69.80 314.00	432(22)
2037	11	69.80 314.40	632(3)
2038	8	69.80 314.80	889(3)
2039	47	69.80 315.20	1018(8)
2040	50	69.80 315.60	444(9)
2041	8	69.80 316.00	231(3)
2043	48	69.80 316.80	444(2)
2044	82	69.80 317.20	243(9)

Table 6. Seasat Greenland Geographical Data Base (Cont.)

BIN NUMBER	NUMBER PTS	LAT-LONG SW CORNER	REV (NUMBER PTS)
2045	11	69.80 317.60	243(3)
2047	26	69.80 318.40	762(8)
2048	17	69.80 318.80	286(4)
2049	31	69.80 319.20	561(22)
2050	36	69.80 319.60	561(5)
2051	32	69.80 320.00	774(10)
2053	12	69.80 320.79	805(24)
2054	73	69.80 321.19	573(17)
2055	38	69.80 321.59	604(8)
2056	42	69.80 321.99	805(11)
2057	36	69.80 322.39	573(22)
2058	51	69.80 322.79	604(10)
2059	13	69.80 323.19	647(2)
2061	10	69.80 323.59	647(26)
2062	17	69.80 324.39	647(4)
2063	1	69.80 324.79	891(14)
2065	4	69.80 325.59	848(4)
2066	22	69.80 325.99	848(26)
2068	5	69.80 326.79	848(2)
2069	25	69.80 327.19	848(2)
2070	8	69.80 327.59	245(1)
2071	5	69.80 327.99	501(9)
2072	9	69.80 328.39	257(2)
2077	15	69.80 330.39	288(2)
2078	13	69.80 330.79	501(18)
2080	4	69.80 331.59	575(5)
2083	1	69.80 332.79	575(8)
2084	14	69.80 333.19	819(2)
2085	12	69.80 333.59	819(7)
2089	3	69.80 335.19	618(7)
2114	31	69.90 305.20	417(15)
2115	11	69.90 305.60	1034(1)
2116	11	69.90 306.00	1034(1)
2127	10	69.90 310.40	271(2)
2129	13	69.90 311.20	1379(1)
2130	24	69.90 311.60	631(1)
2131	13	69.90 312.00	631(1)
2132	17	69.90 312.40	272(6)
2133	5	69.90 312.80	516(4)
2134	18	69.90 313.20	559(3)
2135	26	69.90 313.60	834(1)
2136	10	69.90 314.00	559(23)
2137	20	69.90 314.40	633(6)
2138	14	69.90 314.80	877(5)
2139	42	69.90 315.20	676(6)
2140	27	69.90 315.60	877(6)
2141	57	69.90 316.00	846(1)
2142	81	69.90 316.40	475(4)
2143	24	69.90 316.80	645(5)
2145	32	69.90 317.60	719(2)
2146	17	69.90 318.00	1018(9)
2147	12	69.90 318.40	444(21)
2148	28	69.90 318.80	444(15)
			518(25)
			518(8)
			518(2)
			688(22)
			688(3)
			762(7)
			805(13)
			530(8)

Table 6. Seasat Greenland Geographical Data Base (Cont.)

BIN NUMBER	NUMBER PTS	LAT-LONG SW CORNER	REV (NUMBER PTS)
2149	63	69.90 319.20	530(20)
2150	28	69.90 319.60	286(26)
2151	3	69.90 320.00	286(6)
2152	65	69.90 320.40	573(3)
2153	48	69.90 320.79	573(26)
2154	33	69.90 321.19	647(16)
2155	49	69.90 321.59	573(10)
2156	61	69.90 321.99	647(20)
2157	38	69.90 322.39	1020(8)
2158	23	69.90 323.19	891(25)
2159	52	69.90 323.59	446(10)
2160	14	69.90 323.99	659(24)
2161	6	69.90 325.99	659(14)
2166	26	69.90 326.39	501(25)
2167	24	69.90 326.79	501(8)
2168	22	69.90 328.39	788(24)
2172	2	69.90 329.59	587(24)
2175	7	69.90 329.99	1034(7)
2176	22	69.90 332.39	429(24)
2182	22	69.90 333.39	472(18)
2186	22	69.90 334.39	790(54)
2187	5	69.90 334.79	790(24)
2188	2	69.90 335.19	271(4)
2189	14	69.90 335.59	271(4)
2190	8	70.00 308.00	186(24)
2221	1	70.00 308.40	186(2)
2222	7	70.00 309.20	717(1)
2224	13	70.00 311.80	272(3)
2228	15	70.00 311.20	516(6)
2229	20	70.00 312.00	633(6)
2231	28	70.00 312.40	877(10)
2232	28	70.00 312.80	877(13)
2233	47	70.00 313.20	676(13)
2234	8	70.00 313.60	432(5)
2236	9	70.00 314.00	231(5)
2237	40	70.00 314.40	231(4)
2238	11	70.00 314.80	231(3)
2239	16	70.00 315.20	401(4)
2240	61	70.00 315.60	274(15)
2241	76	70.00 316.00	518(23)
2242	39	70.00 316.40	444(8)
2243	39	70.00 316.80	688(22)
2244	12	70.00 317.20	444(4)
2246	24	70.00 318.00	561(8)
2247	26	70.00 318.40	243(8)
2248	6	70.00 318.80	805(16)
2249	6	70.00 319.20	243(6)
2250	51	70.00 319.60	530(6)
2251	105	70.00 320.00	286(19)
2252	37	70.00 320.40	647(10)
2253	59	70.00 320.79	573(15)
2254	60	70.00 321.19	446(4)
2255	48	70.00 321.59	446(22)
2256	10	70.00 321.99	446(10)

Table 6. Seasat Greenland Geographical Data Base (Cont.)

BIN NUMBER	NUMBER PTS	LAT-LONG SW CORNER	REV (NUMBER PTS)
22257	21	70.00 322.39	616(21)
22258	25	70.00 322.79	489(22)
22259	51	70.00 323.19	485(26)
22260	14	70.00 323.59	489(12)
22262	8	70.00 324.39	489(8)
22263	10	70.00 324.79	532(7)
22264	8	70.00 325.19	776(8)
22267	1	70.00 326.39	575(1)
22268	18	70.00 326.79	501(18)
22269	38	70.00 327.19	501(22)
22270	15	70.00 327.59	618(15)
22275	4	70.00 329.59	587(4)
22288	4	70.00 334.79	228(4)
22291	11	70.10 308.00	791(3)
23221	33	70.10 308.40	186(9)
23222	12	70.10 308.80	186(5)
23223	3	70.10 309.20	186(3)
23224	3	70.10 310.40	229(3)
23227	8	70.10 311.80	834(1)
23228	1	70.10 311.20	877(2)
23229	2	70.10 311.60	272(10)
23330	17	70.10 312.00	432(5)
23331	29	70.10 312.40	432(10)
23332	10	70.10 312.80	559(6)
23333	4	70.10 313.20	559(12)
23334	12	70.10 313.60	231(3)
23335	22	70.10 314.00	231(4)
23336	4	70.10 314.80	274(4)
23338	16	70.10 315.20	274(1)
23339	13	70.10 315.60	645(4)
23340	23	70.10 316.00	401(11)
23341	36	70.10 316.40	401(13)
23342	58	70.10 316.80	561(15)
23343	44	70.10 317.20	200(1)
23344	37	70.10 317.60	444(20)
23345	32	70.10 318.00	243(15)
23348	17	70.10 319.20	243(15)
23349	60	70.10 319.60	647(20)
23350	38	70.10 320.00	848(14)
23351	58	70.10 320.40	530(9)
23352	103	70.10 320.79	286(26)
23353	83	70.10 321.19	446(11)
23354	34	70.10 321.59	573(25)
23355	25	70.10 321.99	489(1)
23356	12	70.10 322.39	245(18)
23357	43	70.10 322.79	489(25)
23358	44	70.10 323.19	489(11)
23359	15	70.10 323.59	616(15)
23360	16	70.10 323.99	532(23)
23361	23	70.10 324.39	288(22)
23362	4	70.10 324.79	776(22)
23363	2	70.10 325.19	1032(19)
23364	19	70.10 325.59	819(5)
23366	5	70.10 325.99	532(2)

Table 6. Seasat Greenland Geographical Data Base (Cont.)

BIN NUMBER	NUMBER PTS	LAT-LONG SW CORNER	REV (NUMBER PTS)
2367	25	70.10 326.39	618(7)
2368	25	70.10 326.79	618(25)
2369	5	70.10 327.19	618(5)
2371	2	70.10 327.99	257(1)
2376	4	70.10 329.99	460(4)
2385	6	70.10 333.59	429(6)
2419	1	70.20 307.20	791(1)
2420	9	70.20 307.60	791(9)
2422	4	70.20 308.40	875(4)
2423	4	70.20 308.80	430(2)
2424	12	70.20 309.20	875(3)
2425	17	70.20 309.60	1219(1)
2427	8	70.20 310.40	430(1)
2428	20	70.20 311.20	473(3)
2429	27	70.20 311.60	229(3)
2430	27	70.20 312.00	432(5)
2431	44	70.20 312.40	272(16)
2432	14	70.20 312.80	272(4)
2433	20	70.20 313.20	475(8)
2434	20	70.20 313.60	231(9)
2435	27	70.20 314.00	475(4)
2436	18	70.20 314.40	559(23)
2437	27	70.20 314.80	518(9)
2438	8	70.20 315.60	274(6)
2440	10	70.20 316.00	518(6)
2441	25	70.20 316.40	561(10)
2442	68	70.20 316.80	645(7)
2443	48	70.20 317.20	604(8)
2444	68	70.20 317.60	604(3)
2445	48	70.20 318.00	604(15)
2446	69	70.20 318.40	444(15)
2447	65	70.20 318.80	200(19)
2448	48	70.20 319.20	647(25)
2449	38	70.20 319.60	243(4)
2450	65	70.20 320.00	243(23)
2451	56	70.20 320.40	243(11)
2452	45	70.20 320.79	446(25)
2453	44	70.20 321.19	286(14)
2454	63	70.20 321.59	446(5)
2455	55	70.20 321.99	286(24)
2456	53	70.20 322.39	245(10)
2457	32	70.20 322.79	245(25)
2458	11	70.20 323.19	532(7)
2459	41	70.20 323.59	288(16)
2460	51	70.20 323.99	532(11)
2461	20	70.20 324.39	616(20)
2462	7	70.20 324.79	575(7)
2464	20	70.20 325.19	659(20)
2465	52	70.20 325.59	659(11)
2466	45	70.20 325.99	530(16)
2467	18	70.20 326.39	286(4)
2471	1	70.20 327.79	489(17)
2472	1	70.20 328.39	573(11)

Table 6. Seasat Greenland Geographical Data Base (Cont.)

BIN NUMBER	NUMBER PTS	LAT-LONG SW CORNER	REV (NUMBER PTS)
2477	6	70.20 330.39	788(6)
2478	4	70.20 330.79	503(4)
2479	7	70.20 331.19	587(7)
2519	2	70.30 307.20	791(2)
2525	4	70.30 309.60	430(2)
2526	11	70.30 310.00	875(2)
2528	26	70.30 310.80	1219(3)
2529	10	70.30 311.20	877(8)
2530	4	70.30 311.60	432(4)
2531	8	70.30 312.00	229(4)
2532	17	70.30 312.40	719(5)
2533	10	70.30 312.80	475(16)
2534	35	70.30 313.20	231(17)
2535	11	70.30 313.60	272(17)
2536	12	70.30 314.00	516(5)
2537	5	70.30 314.40	518(5)
2538	15	70.30 314.80	559(5)
2539	24	70.30 315.20	561(11)
2540	6	70.30 315.60	803(4)
2541	24	70.30 316.00	561(2)
2542	13	70.30 316.40	805(22)
2543	38	70.30 316.80	805(24)
2544	42	70.30 317.20	645(14)
2545	52	70.30 317.60	846(19)
2546	83	70.30 318.00	645(23)
2547	84	70.30 318.40	647(24)
2548	96	70.30 318.80	200(1)
2549	62	70.30 319.20	1018(10)
2550	46	70.30 319.60	444(15)
2551	28	70.30 320.00	200(15)
2552	25	70.30 320.40	446(22)
2553	25	70.30 320.79	446(22)
2554	59	70.30 321.19	243(25)
2555	68	70.30 321.59	243(25)
2556	56	70.30 321.99	245(25)
2557	46	70.30 322.39	489(25)
2558	79	70.30 322.79	286(21)
2559	54	70.30 323.19	530(25)
2560	1	70.30 323.59	288(25)
2561	4	70.30 323.99	575(25)
2562	24	70.30 324.39	616(24)
2563	28	70.30 324.79	616(24)
2564	42	70.30 325.19	618(18)
2565	40	70.30 325.59	618(25)
2566	32	70.30 325.99	659(25)
2567	11	70.30 326.39	659(24)
2568	18	70.30 326.79	659(24)
2569	27	70.30 327.19	417(18)
2572	10	70.30 328.59	173(18)
2576	1	70.30 329.99	460(10)
2578	5	70.30 330.79	503(12)
2617	4	70.40 306.40	788(5)

Table 6. Seasat Greenland Geographical Data Base (Cont.).

BIN NUMBER	NUMBER PTS	LAT-LONG SW CORNER			REV (NUMBER PTS)
		LAT	LONG	SW CORNER	
2626	19	70.40	310.00		
2627	8	70.40	310.40		
2628	12	70.40	310.80		
2629	13	70.40	311.20		
2630	22	70.40	311.60		
2631	16	70.40	312.00		
2632	21	70.40	312.40		
2633	27	70.40	312.80		
2634	48	70.40	313.20		
2635	51	70.40	313.60		
2637	21	70.40	314.00		
2638	33	70.40	314.80		
2639	33	70.40	315.20		
2640	25	70.40	315.60		
2641	20	70.40	316.00		
2643	8	70.40	316.80		
2644	53	70.40	317.20		
2645	95	70.40	317.60		
2646	89	70.40	318.00		
2647	76	70.40	318.40		
2648	93	70.40	318.80		
2649	86	70.40	319.20		
2650	62	70.40	319.60		
2651	19	70.40	320.00		
2652	26	70.40	320.40		
2653	38	70.40	320.79		
2654	23	70.40	321.19		
2655	28	70.40	321.59		
2656	78	70.40	321.99		
2657	97	70.40	322.39		
2658	57	70.40	322.79		
2659	16	70.40	323.19		
2660	24	70.40	323.59		
2661	27	70.40	323.99		
2662	37	70.40	324.39		
2663	45	70.40	324.79		
2664	24	70.40	325.19		
2665	10	70.40	325.59		
2666	13	70.40	326.39		
2667	48	70.40	326.79		
2668	13	70.40	327.19		
2669	11	70.40	327.59		
2670	1	70.40	327.99		
2671	2	70.40	329.59		
2675	22	70.40	329.99		
2676	5	70.40	330.39		
2685	18	70.40	330.79		
2724	2	70.50	330.90		
2725	7	70.50	330.96		
2727	19	70.50	331.00		
2728	58	70.50	331.08		
2729	19	70.50	331.16		
2730	26	70.50	331.20		

Table 6. Seasat Greenland Geographical Data Base (Cont..)

BIN NUMBER	NUMBER PTS	LAT-LONG SW CORNER	REV (NUMBER PTS)
2731	15	70.50 312.00	186(3)
2732	30	70.50 312.40	274(8)
2733	16	70.50 312.80	473(12)
2734	3	70.50 313.20	229(3)
2735	2	70.50 313.60	561(2)
2736	3	70.50 314.00	272(2)
2737	30	70.50 314.40	561(1)
2738	22	70.50 314.80	561(7)
2739	15	70.50 315.20	604(8)
2740	28	70.50 315.60	559(20)
2741	15	70.50 316.00	559(12)
2742	62	70.50 316.40	647(22)
2743	56	70.50 316.80	647(23)
2744	38	70.50 317.20	891(24)
2745	45	70.50 317.60	1020(25)
2746	58	70.50 318.00	690(7)
2747	86	70.50 318.40	446(17)
2748	58	70.50 318.80	446(23)
2749	57	70.50 319.20	601(23)
2750	62	70.50 319.60	489(16)
2751	73	70.50 320.00	200(12)
2752	35	70.50 320.40	444(23)
2753	28	70.50 320.79	200(25)
2754	58	70.50 321.19	688(10)
2755	68	70.50 321.59	489(8)
2756	34	70.50 321.99	243(22)
2757	24	70.50 322.39	575(24)
2758	48	70.50 322.79	286(8)
2759	74	70.50 323.19	286(25)
2760	73	70.50 323.59	530(19)
2761	65	70.50 323.99	530(25)
2762	33	70.50 324.39	573(13)
2763	16	70.50 324.79	573(22)
2764	10	70.50 325.19	573(16)
2765	17	70.50 325.59	417(10)
2766	44	70.50 325.99	417(17)
2768	66	70.50 326.79	460(6)
2770	44	70.50 327.59	659(4)
2771	14	70.50 328.79	1032(3)
2773	33	70.50 329.99	4503(3)
2776	16	70.50 330.39	501(1)
2777	17	70.50 331.99	790(4)
2781	33	70.50 332.39	544(3)
2782	12	70.50 335.99	788(1)
2791	33	70.60 308.80	1476(2)
2823	2	70.60 310.00	1264(1)
2826	16	70.60 310.40	631(2)
2827	17	70.60 311.20	631(8)
2829	17	70.60 311.60	518(2)
2830	8	70.60 312.00	274(5)
2831	42	70.60 312.40	430(3)
2832	21	70.60 312.80	186(6)
2833	23		430(1)
			186(5)
			561(18)

Table 6. Seasat Greenland Geographical Data Base (Cont.)

BIN NUMBER	NUMBER PTS	LAT-LONG SW CORNER	REV (NUMBER PTS)
2834	25	70.60 313.20	473(8)
2835	28	70.60 313.60	473(10)
2836	3	70.60 314.00	229(3)
2837	10	70.60 314.40	604(10)
2838	52	70.60 314.80	272(9)
2839	56	70.60 315.20	272(24)
2840	45	70.60 315.60	272(10)
2841	57	70.60 316.00	559(10)
2842	59	70.60 316.40	559(24)
2843	58	70.60 316.80	559(13)
2844	68	70.60 317.20	446(21)
2845	54	70.60 317.60	446(24)
2846	2	70.60 318.00	446(24)
2847	4	70.60 318.40	489(4)
2848	42	70.60 318.80	489(24)
2849	83	70.60 319.20	401(18)
2850	64	70.60 319.60	401(24)
2851	69	70.60 320.00	288(4)
103	703	70.60 320.40	401(15)
2852	703	70.60 320.79	532(24)
2853	193	70.60 321.19	200(16)
2854	55	70.60 321.59	200(20)
2855	29	70.60 321.99	200(7)
2856	24	70.60 322.39	575(24)
2857	6	70.60 322.79	819(6)
2858	32	70.60 323.19	618(24)
2859	42	70.60 323.59	286(11)
2860	48	70.60 323.99	530(23)
2861	59	70.60 324.39	286(24)
2862	43	70.60 324.79	417(7)
2863	64	70.60 325.19	173(20)
2864	62	70.60 325.59	417(24)
2865	12	70.60 325.99	173(33)
2871	1	70.60 326.39	259(1)
2872	2	70.60 326.79	659(2)
2873	6	70.60 328.19	1032(6)
2885	9	70.60 332.79	544(5)
2926	12	70.70 310.40	588(1)
2927	10	70.70 310.80	274(4)
2928	18	70.70 311.20	274(2)
2930	15	70.70 311.60	561(2)
2931	11	70.70 312.00	875(1)
2933	14	70.70 312.80	186(9)
2934	8	70.70 313.20	430(1)
2936	16	70.70 314.00	229(3)
2937	28	70.70 314.40	229(2)
2938	35	70.70 314.80	717(3)
2939	16	70.70 315.20	848(2)
2940	84	70.70 315.60	647(16)
2941	92	70.70 316.00	272(14)
2942	73	70.70 316.40	516(24)
2943	51	70.70 316.80	272(10)
2944	26	70.70 317.20	446(24)

Table 6. Seasat Greenland Geographical Data Base (Cont.)

BIN NUMBER	NUMBER PTS	LAT-LONG SW CORNER	REV (NUMBER PTS)
2945	23	70.7.0 317.60	489(6) 803(4)
2946	44	70.7.0 318.00	489(23) 803(21)
2947	24	70.7.0 319.20	489(17) 803(7)
2949	18	70.7.0 319.60	288(4) 532(14) 645(24) 776(5) 846(15)
2950	74	70.7.0 320.00	288(20) 401(19) 532(10) 645(25) 776(24) 846(23)
2951	118	70.7.0 320.40	401(20) 645(16) 776(10) 846(10) 889(14)
2952	179	70.7.0 320.79	401(6) 575(24) 889(24) 1018(23) 1018(23)
2953	77	70.7.0 321.19	444(2) 575(24) 688(14) 889(10) 688(24) 819(6)
2954	73	70.7.0 321.59	200(16) 444(24) 575(1) 688(10) 688(10) 819(24)
2955	73	70.7.0 321.99	200(24) 444(20) 618(9) 688(10) 819(18)
2956	87	70.7.0 322.39	200(7) 618(15) 819(18)
2957	47	70.7.0 322.79	
2958	15	70.7.0 323.19	
2959	14	70.7.0 323.59	243(4) 417(9) 417(24) 1034(13) 530(23)
2960	9	70.7.0 323.99	173(20) 286(13) 417(15) 530(11) 1034(11)
2961	57	70.7.0 324.39	173(24) 286(23) 530(24) 774(24)
2962	99	70.7.0 324.79	173(4) 460(18) 530(1) 774(3)
2963	73	70.7.0 325.19	286(10) 573(3) 774(3)
2964	53	70.7.0 325.59	460(3) 573(3) 774(3)
2965	9	70.7.0 326.79	259(2) 546(1) 546(1) 1032(3)
2968	2	70.7.0 328.39	173(2) 659(3) 1032(3)
2972	1	70.7.0 329.19	187(3) 788(1) 788(1)
2974	6	70.7.0 333.19	187(2) 788(1) 788(1)
2984	3	70.7.0 333.59	718(6) 588(22) 518(4)
2985	3	70.7.0 333.99	718(6) 588(18) 518(4)
2986	6	70.7.0 334.39	274(2) 588(22) 518(4)
3026	6	70.8.0 310.00	
3027	22	70.8.0 310.40	
3028	18	70.8.0 310.80	
3029	3	70.8.0 311.20	561(3) 631(3) 832(10)
3030	27	70.8.0 311.60	561(14) 631(13) 832(2)
3031	15	70.8.0 312.00	631(1) 805(5) 832(4)
3032	10	70.8.0 312.40	
3033	4	70.8.0 312.80	875(4) 430(5) 430(20) 647(13) 848(3)
3034	5	70.8.0 313.20	430(4) 430(20) 647(13) 848(3)
3035	29	70.8.0 313.60	186(4) 430(20) 647(13) 848(3)
3036	52	70.8.0 314.00	186(20) 848(3) 891(22) 1020(16)
3037	13	70.8.0 314.40	186(8) 647(2) 677(8) 891(7) 891(6)
3038	39	70.8.0 314.80	473(6) 473(23) 690(8) 717(24) 891(6)
3039	63	70.8.0 315.20	229(4) 446(19) 473(11) 717(3) 1020(2)
3040	39	70.8.0 315.60	229(4) 446(23) 516(1) 690(12) 760(11)
3041	36	70.8.0 316.00	446(23) 516(3) 516(23) 760(11)
3042	50	70.8.0 316.40	272(13) 446(3) 516(9) 516(23) 760(24)
3043	80	70.8.0 316.80	272(24) 489(9) 516(23) 760(15)
3044	53	70.8.0 317.20	272(13) 489(23) 516(2) 760(15)
3045	28	70.8.0 317.60	489(18) 559(10) 645(5) 846(14)
3046	21	70.8.0 318.00	559(21) 532(17) 559(16)
3047	60	70.8.0 318.40	288(7) 532(24) 776(11)
3048	59	70.8.0 318.80	288(24) 532(9) 776(24)
3049	52	70.8.0 319.20	288(19) 532(9) 776(15)
3050	17	70.8.0 319.60	575(22) 575(2) 645(5) 846(14)
3051	22	70.8.0 320.00	
3052	40	70.8.0 320.40	

Table 6. Seasat Greenland Geographical Data Base (Cont.)

BIN NUMBER	NUMBER PTS	LAT-LONG SW CORNER	REV (NUMBER PTS)
3053	72	70.80 320.79	401(18) 819(8) 846(23)
3054	107	70.80 321.19	401(23) 645(21) 819(24)
3055	95	70.80 321.59	618(12) 645(21) 819(24)
3056	67	70.80 321.99	401(9) 819(17) 889(23)
3057	66	70.80 322.39	444(3) 618(14) 688(14) 889(13)
3058	70	70.80 322.79	200(15) 444(24) 688(23) 1018(4)
3059	74	70.80 323.19	200(23) 417(12) 444(23) 688(12)
3060	61	70.80 323.59	200(11) 417(24) 417(23) 1034(16)
3061	17	70.80 323.99	173(14) 417(14) 1034(23)
3062	21	70.80 324.39	173(3) 243(3) 1034(11)
3063	24	70.80 324.79	460(21) 460(24) 460(5) 530(6)
3064	23	70.80 325.19	286(12) 286(10) 774(20)
3065	30	70.80 325.59	286(12) 259(3) 774(24)
3066	27	70.80 325.99	774(6)
3067	6	70.80 326.39	573(5)
3068	5	70.80 326.79	573(5)
3071	10	70.80 327.99	790(10)
3077	12	70.80 330.39	632(12)
3085	11	70.80 333.59	718(1)
3086	12	70.80 333.99	718(2)
3093	1	70.80 336.79	630(2)
3095	2	70.80 337.59	603(2)
3112	1	70.90 304.40	617(1)
3124	1	70.90 309.20	258(1)
3126	8	70.90 310.00	561(8)
3128	8	70.90 310.80	561(7) 805(1)
3130	18	70.90 311.60	588(17) 805(1)
3132	13	70.90 312.40	631(12) 832(12)
3133	29	70.90 312.80	631(10) 647(6)
3134	20	70.90 313.20	631(8) 647(5)
3135	37	70.90 313.60	631(12) 647(13)
3136	41	70.90 314.00	430(2) 875(24)
3137	82	70.90 314.40	186(15) 430(21)
3138	68	70.90 314.80	186(20) 430(24)
3139	48	70.90 315.20	186(14) 430(3)
3140	12	70.90 315.60	473(12) 473(24)
3141	52	70.90 316.00	229(24) 473(24)
3142	69	70.90 316.40	229(23) 473(17)
3143	20	70.90 316.80	229(25) 489(15)
3144	40	70.90 317.20	272(10) 516(22)
3145	95	70.90 317.60	272(19) 288(13)
3146	63	70.90 318.00	288(23) 532(23)
3147	52	70.90 318.40	288(16) 532(6)
3148	44	70.90 318.80	559(24) 575(8)
3149	43	70.90 319.20	559(20) 575(23)
3150	28	70.90 319.60	575(21) 803(7)
3151	17	70.90 320.00	803(3) 819(14)
3152	40	70.90 320.40	618(17) 819(23)
3153	38	70.90 320.79	618(23) 819(15)
3154	24	70.90 321.19	618(11) 645(2)
3155	51	70.90 321.59	401(5) 645(23)
3156	72	70.90 321.99	417(5) 645(23)
3157	108	70.90 322.39	173(23) 417(24) 889(20) 1018(17) 1034(21)

Table 6. Seasat Greenland Geographical Data Base (Cont.)

BIN NUMBER	NUMBER PTS	LAT-LONG SW CORNER	REV (NUMBER PTS)	
			1018(23)	1034(24)
3158	111	70.90 322.79	417(11)	688(18)
3159	79	70.90 323.19	200(12)	460(3)
3160	77	70.90 323.59	200(24)	460(24)
3161	40	70.90 324.39	460(16)	460(24)
3162	2	70.90 324.39	200(24)	460(24)
3163	12	70.90 324.79	243(11)	259(1)
3164	3	70.90 325.19	243(11)	503(1)
3165	4	70.90 325.59	503(4)	
3166	4	70.90 325.99	530(6)	
3167	21	70.90 326.39	286(2)	546(17)
3168	14	70.90 326.79	774(13)	774(17)
3169	8	70.90 327.19	790(8)	790(11)
3170	19	70.90 327.59	573(8)	
3171	12	70.90 327.99	790(2)	
3174	1	70.90 329.19	833(1)	
3178	7	70.90 330.79	431(5)	
3193	3	70.90 336.79	587(3)	
3194	8	70.90 337.19	603(8)	
3195	1	70.90 337.59	603(3)	
3213	14	71.00 304.80	617(11)	
3224	16	71.00 309.20	561(14)	
3225	8	71.00 309.60	258(7)	
3226	15	71.00 310.00	258(3)	
3227	19	71.00 310.40	805(9)	
3228	2	71.00 310.80	805(2)	
3231	12	71.00 312.00	647(3)	
3232	9	71.00 312.40	588(9)	
3233	25	71.00 312.80	588(13)	
3234	21	71.00 313.20	832(4)	
3235	74	71.00 313.60	446(12)	
3236	43	71.00 314.00	446(20)	
3237	37	71.00 314.40	446(17)	
3238	23	71.00 314.80	875(23)	
3239	78	71.00 315.20	186(10)	
3240	92	71.00 315.60	430(21)	
3241	43	71.00 316.00	186(22)	
3242	26	71.00 316.40	473(6)	
3243	100	71.00 316.80	532(18)	
3244	127	71.00 317.20	229(18)	
3245	49	71.00 317.60	229(13)	
3246	7	71.00 318.00	229(10)	
3247	68	71.00 318.40	272(19)	
3248	76	71.00 318.80	272(23)	
3249	37	71.00 319.20	272(3)	
3250	68	71.00 319.60	559(23)	
3251	56	71.00 320.00	618(24)	
3252	34	71.00 320.40	559(6)	
3253	25	71.00 320.79	417(2)	
3254	51	71.00 321.19	173(14)	
3255	67	71.00 321.59	173(23)	
3256	51	71.00 321.99	173(18)	
3257	48	71.00 322.39	460(4)	
3258	74	71.00 322.79	460(23)	

Table 6. Seasat Greenland Geographical Data Base (Cont.)

BIN NUMBER	NUMBER PTS	LAT-LONG SW CORNER	REV (NUMBER PTS)
3259	70	71.00 323.19	460(20)
3260	52	71.00 323.59	645(11)
3261	62	71.00 323.99	688(6)
3262	39	71.00 324.39	889(23)
3263	24	71.00 324.79	1018(23)
3264	2	71.00 325.19	1018(14)
3265	1	71.00 325.59	689(23)
3266	15	71.00 325.99	503(4)
3267	3	71.00 326.39	688(14)
3269	15	71.00 327.19	200(23)
3270	37	71.00 327.59	200(23)
3271	13	71.00 327.99	286(18)
3272	4	71.00 328.39	286(18)
3273	4	71.00 328.79	573(6)
3277	3	71.00 330.39	573(6)
3278	2	71.00 330.79	616(3)
3281	2	71.00 331.19	187(2)
3282	5	71.00 332.39	659(22)
3290	4	71.00 335.59	1032(5)
3291	8	71.00 335.99	603(4)
3292	1	71.00 336.39	603(8)
3293	15	71.00 336.79	788(12)
3294	17	71.00 337.19	788(15)
3323	8	71.10 308.80	646(5)
3324	15	71.10 309.20	459(8)
3325	3	71.10 309.60	459(6)
3326	4	71.10 310.00	459(3)
3327	10	71.10 310.40	805(9)
3328	2	71.10 310.80	258(10)
3329	26	71.10 311.20	647(9)
3330	28	71.10 311.60	258(9)
3331	17	71.10 312.00	647(5)
3332	16	71.10 312.40	891(13)
3333	40	71.10 312.80	446(21)
3334	29	71.10 313.20	446(20)
3335	30	71.10 313.60	446(9)
3336	15	71.10 314.00	489(10)
3337	40	71.10 314.40	489(21)
3338	48	71.10 314.80	489(23)
3339	25	71.10 315.20	631(20)
3340	36	71.10 315.60	832(5)
3341	89	71.10 316.00	288(2)
3342	122	71.10 316.40	875(22)
3343	81	71.10 316.80	186(13)
3344	33	71.10 317.20	186(10)
3345	77	71.10 317.60	229(10)
3346	81	71.10 318.00	473(21)
3347	79	71.10 318.40	473(23)
3348	55	71.10 318.80	473(13)
3349	81	71.10 319.20	516(8)
3350	68	71.10 319.60	272(20)
			516(23)
			760(23)
			516(23)
			760(17)

Table 6. Seasat Greenland Geographical Data Base (Cont.)

BIN NUMBER	NUMBER PTS	LAT-LONG SW CORNER	REV (NUMBER PTS)	
			16)	760(16)
3351	51	71.10 320.00	173(3)	272(15)
3352	78	71.10 320.40	173(22)	417(14)
3353	89	71.10 320.79	173(23)	559(17)
3354	55	71.10 321.19	173(9)	559(21)
3355	45	71.10 321.59	460(22)	559(17)
3356	41	71.10 321.99	460(23)	803(12)
3357	9	71.10 322.39	460(9)	803(18)
3358	8	71.10 322.79	503(8)	503(23)
3359	76	71.10 323.19	259(20)	645(12)
3360	79	71.10 323.59	259(21)	503(15)
3361	61	71.10 323.99	259(13)	645(22)
3362	4	71.10 324.39	546(4)	846(14)
3364	33	71.10 324.79	200(10)	546(1)
3365	26	71.10 325.59	200(16)	790(22)
3366	12	71.10 325.99	444(2)	790(8)
3368	3	71.10 326.79	243(3)	833(21)
3369	15	71.10 327.19	632(11)	833(4)
3370	28	71.10 327.59	530(5)	632(23)
3371	23	71.10 327.99	286(9)	530(4)
3372	7	71.10 328.39	876(7)	632(10)
3374	6	71.10 329.19	573(6)	844(21)
3375	7	71.10 329.59	573(7)	718(1)
3378	1	71.10 330.79	474(6)	603(7)
3381	17	71.10 331.99	659(1)	659(4)
3382	2	71.10 332.39	517(3)	847(1)
3383	10	71.10 332.79	257(3)	788(1)
3388	15	71.10 335.59	646(5)	1148(1)
3390	15	71.10 336.39	646(1)	1248(6)
3392	2	71.10 336.79	646(2)	1248(5)
3393	12	71.10 337.19	172(5)	1162(1)
3394	17	71.20 308.80	172(7)	647(4)
3423	13	71.20 309.20	459(4)	848(7)
3424	15	71.20 310.00	647(21)	891(2)
3426	29	71.20 310.40	647(10)	848(1)
3427	19	71.20 310.80	891(6)	891(3)
3428	6	71.20 311.20	446(5)	1020(5)
3429	9	71.20 311.60	458(3)	502(5)
3430	20	71.20 312.00	458(8)	690(5)
3431	8	71.20 313.20	489(8)	588(9)
3434	14	71.20 314.00	489(5)	588(23)
3436	31	71.20 314.40	532(22)	588(21)
3437	43	71.20 314.80	532(22)	631(3)
3438	40	71.20 315.20	288(6)	532(13)
3439	56	71.20 315.60	631(20)	776(14)
3440	51	71.20 316.00	575(19)	631(23)
3441	71	71.20 316.40	575(22)	875(22)
3442	41	71.20 316.80	575(19)	819(2)
3443	54	71.20 317.20	186(12)	674(4)
3444	83	71.20 317.60	430(20)	618(9)
103	103	71.20 318.00	186(23)	618(22)
3445	72	71.20 318.40	430(15)	618(12)
3446	38	71.20 318.80	186(3)	618(10)
3447	73	71.20 319.20	229(21)	473(23)
3448	114		173(17)	717(16)
			229(17)	473(22)

Table 6. Seasat Greenland Geographical Data Base (Cont.)

BIN NUMBER	NUMBER PTS	LAT-LONG SW CORNER	REV (NUMBER PTS)
3450	88	71.20 319.60	229(16) 417(23) 473(6)
3451	85	71.20 320.00	173(21) 272(20) 417(8) 516(19)
3452	89	71.20 320.40	272(23) 460(22) 516(15) 760(23)
3453	85	71.20 320.79	272(22) 460(21) 516(18) 760(23)
3454	64	71.20 321.19	272(7) 460(23) 559(6) 1034(5)
3455	23	71.20 321.59	559(23) 503(23) 559(23) 1034(22)
3456	56	71.20 321.99	503(13) 559(23) 559(16) 760(6)
3457	66	71.20 322.39	259(23) 503(18) 559(12) 1034(23)
3458	59	71.20 322.79	259(22) 503(15) 803(22)
3459	22	71.20 323.19	2.9(3) 546(8) 803(11)
3460	23	71.20 323.59	546(23) 546(23) 546(8) 803(23)
3461	46	71.20 323.99	546(23) 790(14) 846(9) 846(9)
3462	50	71.20 324.39	401(6) 546(6) 645(7) 790(22)
3463	23	71.20 324.79	790(23) 889(2)
3464	3	71.20 325.19	790(1) 889(2)
3465	15	71.20 325.59	889(15) 889(15) 889(7)
3466	35	71.20 325.99	200(10) 632(5) 833(15) 846(9)
3467	67	71.20 326.39	200(23) 632(22) 833(22)
3468	30	71.20 326.79	200(11) 632(22) 833(7)
3469	12	71.20 327.19	632(12) 876(2)
3470	3	71.20 327.59	243(1) 876(2)
3471	8	71.20 327.99	243(1) 431(4) 876(3)
3472	11	71.20 328.39	675(8) 876(3)
3477	13	71.20 328.79	675(8) 876(3)
3478	7	71.20 330.79	573(7) 876(3)
3479	2	71.20 331.19	573(7) 876(3)
3490	17	71.20 335.59	573(2) 646(12)
3491	7	71.20 335.99	573(2) 646(12)
3492	4	71.20 336.39	573(2) 646(12)
3522	4	71.30 308.80	617(4) 1492(5)
3523	2	71.30 309.20	647(2) 1492(5)
3524	1	71.30 309.60	667(2) 1492(5)
3525	49	71.30 310.00	891(1) 891(14) 891(15) 1205(4)
3526	43	71.30 310.40	172(3) 647(4) 1020(4) 1162(5)
3527	23	71.30 310.80	1248(11) 446(2) 1205(2) 1248(18)
3528	16	71.30 311.20	446(2) 690(5) 1020(1) 1205(1)
3529	38	71.30 311.60	446(9) 459(17) 690(12) 1278(3)
3530	11	71.30 312.00	459(11) 891(1) 891(14) 1205(8)
3531	1	71.30 312.40	647(3) 1278(9) 1278(9) 1278(3)
3532	7	71.30 312.80	647(3) 1278(9) 1278(9) 1278(3)
3533	25	71.30 313.20	258(16) 502(2)
3534	28	71.30 313.60	258(22) 532(6) 532(20) 532(20)
3535	42	71.30 314.00	258(22) 532(6) 532(20) 532(20)
3536	43	71.30 314.40	288(1) 588(4) 588(17) 776(22)
3537	44	71.30 314.80	288(10) 588(12) 588(12) 776(22)
3538	33	71.30 315.20	575(16) 588(11) 588(11) 776(16)
3539	43	71.30 315.60	575(20) 588(23) 588(23) 776(16)
3540	43	71.30 316.00	575(21) 588(22) 588(22) 776(22)
3541	39	71.30 316.40	575(21) 588(22) 588(22) 776(22)
3542	69	71.30 316.80	618(20) 631(9) 631(9) 832(20)
3543	71	71.30 317.20	618(21) 631(22) 631(22) 832(20)
3544	56		618(23) 631(23) 631(23) 832(16)

Table 6. Seasat Greenland Geographical Data Base (Cont.)

BIN NUMBER	NUMBER PTS	LAT-LONG SW CORNER		REV (NUMBER PTS)	
		417(3)	631(9)	875(16)	875(22)
3545	28	71.30	317.60	417(3)	875(22)
3546	87	71.30	318.00	417(22)	875(22)
3547	151	71.30	318.40	1034(22)	430(22)
3548	132	71.30	318.80	1034(22)	430(22)
3549	64	71.30	319.20	1034(14)	430(11)
3550	67	71.30	319.60	229(6)	473(16)
3551	86	71.30	320.00	229(23)	460(22)
3552	67	71.30	320.40	229(20)	473(22)
3553	48	71.30	320.79	259(13)	259(10)
3554	98	71.30	321.19	259(22)	272(16)
3555	111	71.30	321.59	259(23)	272(22)
3556	157	71.30	321.99	259(9)	466(22)
3557	38	71.30	322.39	272(9)	546(22)
3558	56	71.30	322.79	546(22)	546(18)
3559	70	71.30	323.19	546(14)	559(22)
3560	50	71.30	323.59	559(6)	559(22)
3561	31	71.30	323.99	790(9)	790(22)
3562	8	71.30	324.39	803(8)	803(22)
3563	12	71.30	324.79	833(12)	833(22)
3564	46	71.30	325.19	632(21)	645(11)
3565	66	71.30	325.59	401(12)	632(23)
3566	39	71.30	325.99	632(19)	645(9)
3567	25	71.30	326.39	632(19)	876(22)
3568	10	71.30	326.79	876(6)	889(22)
3569	4	71.30	327.19	187(1)	431(3)
3570	3	71.30	327.59	200(2)	444(1)
3571	5	71.30	327.99	187(5)	474(1)
3572	10	71.30	329.19	230(10)	761(2)
3574	16	71.30	330.39	530(4)	530(5)
3577	6	71.30	330.79	530(5)	530(7)
3578	5	71.30	331.19	573(7)	573(5)
3579	7	71.30	331.59	560(12)	573(5)
3580	6	71.30	331.99	573(7)	573(5)
3581	7	71.30	332.39	603(7)	603(7)
3582	5	71.30	332.79	1492(5)	1492(4)
3589	5	71.30	333.19	1492(4)	1492(4)
3590	4	71.30	333.59	1320(5)	1449(8)
3591	11	71.30	333.99	1020(4)	1020(4)
3622	14	71.40	308.40	1020(1)	1235(4)
3623	1	71.40	308.80	1020(1)	1235(4)
3624	15	71.40	309.20	891(7)	1235(5)
3625	13	71.40	309.60	690(3)	1235(5)
3626	11	71.40	310.00	1235(1)	1235(1)
3628	48	71.40	310.80	172(13)	489(8)
3629	35	71.40	311.20	172(1)	489(17)
3630	22	71.40	311.60	459(1)	489(17)
3631	9	71.40	312.00	459(12)	489(1)
3632	12	71.40	312.40	288(8)	459(20)
3633	50	71.40	312.80	288(22)	459(5)
3634	62	71.40	313.20	288(20)	532(14)
3635	56	71.40	313.60	288(20)	575(14)

Table 6. Seasat Greenland Geographical Data Base (Cont.)

BIN NUMBER	NUMBER PTS	LAT-LONG SW CORNER	REV (NUMBER PTS)
3636	37	71.40 314.00	575(16)
3637	46	71.40 314.40	575(23)
3638	37	71.40 314.80	575(4)
3639	40	71.40 315.20	575(6)
3640	41	71.40 315.60	575(20)
3641	26	71.40 316.00	575(20)
3642	27	71.40 316.40	575(20)
3643	52	71.40 316.80	575(22)
3644	84	71.40 317.20	575(23)
3645	99	71.40 317.60	575(23)
3646	82	71.40 318.00	575(22)
3647	61	71.40 318.40	575(22)
3648	51	71.40 318.80	575(22)
3649	69	71.40 319.20	575(22)
3650	121	71.40 319.60	575(22)
3651	113	71.40 320.00	575(22)
3652	77	71.40 320.40	575(22)
3653	74	71.40 320.79	575(22)
3654	88	71.40 321.19	575(22)
3655	99	71.40 321.59	575(22)
3656	34	71.40 321.99	575(22)
3657	79	71.40 322.39	575(22)
3658	78	71.40 322.79	575(22)
3659	59	71.40 323.19	575(22)
3660	43	71.40 323.59	575(22)
3661	66	71.40 323.99	575(22)
3662	76	71.40 324.39	575(22)
3663	41	71.40 324.79	575(22)
3664	4	71.40 325.19	575(22)
3665	60	71.40 325.59	575(22)
3666	42	71.40 325.99	575(22)
3667	2	71.40 326.39	575(22)
3668	14	71.40 326.79	575(22)
3669	27	71.40 327.19	575(22)
3670	27	71.40 327.59	575(22)
3671	13	71.40 327.99	575(22)
3672	2	71.40 328.39	575(22)
3673	5	71.40 328.79	575(22)
3674	2	71.40 329.19	575(22)
3675	2	71.40 329.59	575(22)
3676	1	71.40 332.39	575(22)
3677	13	71.40 332.79	575(22)
3678	7	71.40 333.19	575(22)
3679	12	71.40 333.59	575(22)
3691	13	71.40 333.99	575(22)
3692	3	71.40 336.39	575(22)
3693	3	71.40 336.79	575(22)
3712	1	71.50 304.40	575(22)
3713	1	71.50 304.80	575(22)
3714	11	71.50 305.20	575(22)
3718	1	71.50 306.80	575(22)
3728	30	71.50 310.80	575(22)
3729	21	71.50 311.20	575(22)
3730	8	71.50 311.60	575(22)

Table 6. Seasat Greenland Geographical Data Base (Cont.)

BIN NUMBER	NUMBER PTS	LAT-LONG SW CORNER	REV (NUMBER PTS)
3731	25	71.50 312.00	532(6)
3732	26	71.50 312.40	776(16)
3733	43	71.50 312.80	575(18)
3734	55	71.50 313.20	575(21)
3735	60	71.50 313.60	459(17)
3736	66	71.50 314.00	575(22)
3737	54	71.50 314.40	459(22)
3738	35	71.50 314.80	459(11)
3739	37	71.50 315.20	258(18)
3740	79	71.50 315.60	173(3)
3741	74	71.50 316.00	173(22)
3742	39	71.50 316.40	417(17)
3743	37	71.50 316.80	460(22)
3744	25	71.50 317.20	1034(15)
3745	43	71.50 317.60	460(22)
3746	37	71.50 318.00	460(22)
3747	68	71.50 318.40	259(21)
3748	73	71.50 318.80	259(22)
3749	87	71.50 319.20	259(22)
3750	70	71.50 319.60	259(10)
3751	63	71.50 320.00	546(22)
3752	84	71.50 320.40	430(9)
3753	117	71.50 320.79	430(15)
3754	100	71.50 321.19	186(22)
3755	67	71.50 321.59	186(22)
3756	34	71.50 321.99	186(22)
3757	98	71.50 322.39	229(22)
3758	107	71.50 322.79	473(21)
3759	77	71.50 323.19	229(11)
3760	100	71.50 323.59	272(17)
3761	98	71.50 323.99	187(11)
3762	130	71.50 324.39	187(22)
3763	111	71.50 324.79	187(22)
			272(15)
			760(15)
			876(22)
3764	27	71.50 325.19	559(4)
3765	40	71.50 325.59	187(22)
3766	46	71.50 325.99	230(10)
3767	42	71.50 326.39	230(21)
3768	9	71.50 326.79	718(19)
3769	10	71.50 327.19	718(8)
3770	20	71.50 327.59	761(10)
3771	11	71.50 327.99	761(20)
3772	19	71.50 328.39	761(11)
3773	3	71.50 329.59	401(11)
3774	3	71.50 330.99	1018(3)
3775	16	71.50 330.39	200(3)
3776	16	71.50 330.79	603(1)
3777	11	71.50 335.59	244(3)
3778	3	71.50 335.99	616(3)
3779	3	71.50 336.00	646(10)
3781	16	71.60 304.40	1234(2)
3812	2	71.60 304.80	1492(2)
3813	2	71.60 305.20	

Table 6. Seasat Greenland Geographical Data Base (Cont.)

BIN NUMBER	NUMBER PTS	LAT-LONG SW CORNER	REV (NUMBER PTS)
3820	1	71.60 307.60	489(1)
3825	11	71.60 309.60	775(7)
3826	18	71.60 310.00	287(4)
3827	8	71.60 310.40	532(8)
3828	22	71.60 310.80	532(3)
3829	20	71.60 311.20	575(12)
3830	15	71.60 311.60	575(10)
3831	18	71.60 312.00	819(5)
3832	35	71.60 312.40	618(15)
3833	8	71.60 312.80	819(8)
3834	35	71.60 313.20	617(14)
3835	41	71.60 313.60	617(8)
3836	70	71.60 314.00	172(14)
3837	95	71.60 314.40	172(21)
3838	91	71.60 314.80	172(22)
3839	88	71.60 315.20	173(4)
3840	49	71.60 315.60	173(19)
3841	38	71.60 316.00	459(22)
3842	46	71.60 316.40	459(22)
3843	58	71.60 316.80	258(9)
3844	57	71.60 317.20	258(20)
3845	52	71.60 317.60	258(20)
3846	44	71.60 318.00	259(22)
3847	22	71.60 318.40	259(22)
3848	53	71.60 318.80	259(1)
3849	65	71.60 319.20	546(20)
3850	49	71.60 319.60	546(21)
3851	59	71.60 320.00	546(7)
3852	46	71.60 320.40	588(20)
3853	69	71.60 320.79	588(22)
3854	91	71.60 321.19	631(22)
3855	83	71.60 321.59	631(21)
3856	75	71.60 321.99	631(16)
3857	99	71.60 322.39	186(22)
3858	108	71.60 322.79	186(21)
3859	111	71.60 323.19	186(22)
3860	96	71.60 323.59	876(22)
3861	114	71.60 323.99	186(3)
3862	108	71.60 324.39	187(22)
3863	99	71.60 324.79	187(21)
3864	91	71.60 325.19	187(21)
3865	63	71.60 325.59	230(22)
3866	64	71.60 325.99	230(22)
3867	31	71.60 326.39	230(21)
3868	27	71.60 326.79	272(22)
3869	35	71.60 327.19	272(22)
3870	26	71.60 327.59	272(12)
3871	19	71.60 327.99	516(21)
3872	9	71.60 328.39	560(19)
3873	11	71.60 328.79	560(9)
			603(4)
			804(7)
			803(2)

Table 6. Seasat Greenland Geographical Data Base (Cont.)

BIN NUMBER	NUMBER PTS	LAT-LONG SW CORNER	REV (NUMBER PTS)
3874	7	71.60 329.19	645(7) 889(2)
3875	5	71.60 329.59	646(1) 846(2)
3876	7	71.60 329.99	645(1) 846(6)
3877	13	71.60 330.39	401(3) 645(3)
3878	7	71.60 330.79	646(7) 646(6)
3880	18	71.60 331.59	201(6) 445(8)
3885	2	71.60 333.59	244(2) 890(4)
3888	9	71.60 334.79	775(9)
3890	2	71.60 335.59	573(2)
3891	17	71.60 335.99	573(17)
3911	10	71.70 304.00	804(9) 1321(1)
3912	3	71.70 304.40	690(1) 804(2)
3913	8	71.70 304.80	603(1) 804(1)
3914	5	71.70 305.20	489(4) 891(3)
3919	5	71.70 307.20	489(1) 1019(1)
3920	1	71.70 307.60	1191(1)
3921	1	71.70 308.00	776(3)
3922	3	71.70 308.40	201(1) 776(1)
3923	2	71.70 308.80	244(2) 575(6)
3925	12	71.70 309.60	244(12) 575(4)
3926	19	71.70 310.00	244(19) 819(8)
3927	16	71.70 310.40	244(6) 287(12)
3928	11	71.70 310.80	618(8) 775(9)
3929	25	71.70 311.20	287(2) 775(3)
3930	22	71.70 311.60	618(17) 819(5)
3931	37	71.70 312.00	618(8) 417(17)
3932	58	71.70 312.40	173(22) 417(21)
3933	68	71.70 312.80	173(21) 417(22)
3933	68	71.70 313.20	173(21) 417(21)
3934	85	71.70 313.60	460(21) 460(6)
3935	94	71.70 314.00	460(21) 617(19)
3936	51	71.70 314.40	460(21) 617(10)
3937	39	71.70 314.80	460(21) 617(18)
3938	53	71.70 315.20	172(22) 460(19)
3939	65	71.70 315.60	259(22) 460(19)
3940	64	71.70 316.00	172(21) 503(22)
3941	79	71.70 316.40	172(22) 459(14)
3942	92	71.70 316.80	172(13) 459(21)
3943	51	71.70 317.20	258(21) 459(22)
3944	58	71.70 317.60	459(5) 459(21)
3945	70	71.70 318.00	258(13) 459(17)
3946	52	71.70 318.40	258(21) 546(17)
3947	44	71.70 318.80	258(22) 790(21)
3948	30	71.70 319.20	258(21) 790(4)
3949	55	71.70 319.60	459(21) 833(5)
3950	42	71.70 320.00	632(21) 833(16)
3951	44	71.70 320.40	632(22) 833(21)
3952	85	71.70 320.79	588(19) 632(15)
3953	106	71.70 321.19	187(6) 675(21)
3954	108	71.70 321.59	187(22) 675(22)
3955	133	71.70 321.99	187(21) 675(21)
			876(21)

Table 6. Seasat Greenland Geographical Data Base (Cont.)

BIN NUMBER	NUMBER PTS	LAT-LONG SW CORNER	REV (NUMBER PTS)
3956	111	71.70 321.99	431(22) 588(7) 631(11) 675(11)
3957	143	71.70 322.39	431(22) 588(7) 631(22) 675(7)
3958	103	71.70 322.79	431(22) 588(7) 631(21) 832(4)
3959	99	71.70 323.19	431(22) 588(7) 631(21) 675(21)
3960	68	71.70 323.59	431(22) 588(7) 631(21) 675(21)
3961	41	71.70 323.99	431(22) 588(7) 631(21) 675(21)
3962	26	71.70 324.39	431(22) 588(7) 631(21) 675(15)
3963	48	71.70 324.79	431(22) 588(7) 631(21) 675(15)
3964	77	71.70 325.19	431(22) 588(7) 631(21) 675(21)
3965	63	71.70 325.59	431(22) 588(7) 631(21) 675(21)
3966	60	71.70 325.99	431(22) 588(7) 631(21) 675(21)
3967	68	71.70 326.39	431(22) 588(7) 631(21) 675(21)
3968	31	71.70 326.79	431(22) 588(7) 631(21) 675(21)
3969	6	71.70 327.19	431(22) 588(7) 631(21) 675(21)
3970	5	71.70 327.59	431(22) 588(7) 631(21) 675(21)
3971	53	71.70 327.99	431(22) 588(7) 631(21) 675(21)
3972	33	71.70 328.39	431(22) 588(7) 631(21) 675(21)
3973	22	71.70 328.79	431(22) 588(7) 631(21) 675(21)
3974	2	71.70 329.19	431(22) 588(7) 631(21) 675(21)
3975	8	71.70 329.59	431(22) 588(7) 631(21) 675(21)
3976	22	71.70 329.99	431(22) 588(7) 631(21) 675(21)
3977	55	71.70 330.39	431(22) 588(7) 631(21) 675(21)
3978	77	71.70 330.79	431(22) 588(7) 631(21) 675(21)
3979	2	71.70 333.19	431(22) 588(7) 631(21) 675(21)
3980	7	71.70 333.59	431(22) 588(7) 631(21) 675(21)
3981	1	71.70 334.79	431(22) 588(7) 631(21) 675(21)
3982	17	71.70 335.59	431(22) 588(7) 631(21) 675(21)
3983	16	71.70 335.99	431(22) 588(7) 631(21) 675(21)
4011	12	71.80 304.00	273(1) 617(1) 774(1) 804(1)
4014	33	71.80 305.20	273(1) 617(1) 774(1) 804(1)
4020	22	71.80 306.80	273(1) 617(1) 774(1) 804(1)
4021	33	71.80 308.00	273(1) 617(1) 774(1) 804(1)
4022	3	71.80 308.40	273(1) 617(1) 774(1) 804(1)
4023	8	71.80 308.80	273(1) 617(1) 774(1) 804(1)
4024	3	71.80 309.20	273(1) 617(1) 774(1) 804(1)
4025	25	71.80 309.60	273(1) 617(1) 774(1) 804(1)
4026	40	71.80 310.00	273(1) 617(1) 774(1) 804(1)
4027	53	71.80 310.40	273(1) 617(1) 774(1) 804(1)
4028	55	71.80 310.80	273(1) 617(1) 774(1) 804(1)
4029	85	71.80 311.20	273(1) 617(1) 774(1) 804(1)
4030	24	71.80 311.60	273(1) 617(1) 774(1) 804(1)
4031	68	71.80 312.00	273(1) 617(1) 774(1) 804(1)
4032	100	71.80 312.40	273(1) 617(1) 774(1) 804(1)

Table 6. Seasat Greenland Geographical Data Base (Cont.)

BIN NUMBER	NUMBER PTS	LAT-LONG SW CORNER	REV (NUMBER PTS)
4033	103	71.80 312.80	244(4)
4034	92	71.80 313.20	259(4)
4035	80	71.80 313.60	259(19)
4036	77	71.80 314.00	259(22)
4037	68	71.80 314.40	259(21)
4038	72	71.80 314.80	259(21)
4039	60	71.80 315.20	259(17)
4040	60	71.80 315.60	259(15)
4041	58	71.80 316.00	259(21)
4042	49	71.80 316.40	259(16)
4043	59	71.80 316.80	287(21)
4044	62	71.80 317.20	287(21)
4045	66	71.80 317.60	287(19)
4046	91	71.80 318.00	287(19)
4047	124	71.80 318.40	287(21)
4048	139	71.80 318.80	876(22)
4049	114	71.80 319.20	187(15)
4050	126	71.80 319.60	187(15)
4051	140	71.80 320.00	187(15)
4052	146	71.80 320.40	187(15)
4053	104	71.80 320.79	876(21)
4054	90	71.80 321.19	876(21)
4055	81	71.80 321.59	876(21)
4056	63	71.80 321.99	876(21)
4057	67	71.80 322.39	876(21)
4058	68	71.80 322.79	876(21)
4059	53	71.80 323.19	876(21)
4060	46	71.80 323.59	876(21)
4061	25	71.80 323.99	876(21)
4062	20	71.80 324.39	876(21)
4063	42	71.80 324.79	876(21)
4064	43	71.80 325.19	876(21)
4065	32	71.80 325.59	876(21)
4066	5	71.80 325.99	876(21)
4067	22	71.80 326.39	876(21)
4068	30	71.80 326.79	876(21)
4069	23	71.80 327.19	876(21)
4070	40	71.80 327.59	876(21)
4071	28	71.80 327.99	876(21)
4072	6	71.80 328.39	876(21)
4074	3	71.80 328.79	876(21)
4075	15	71.80 329.19	876(21)
4076	8	71.80 329.59	876(21)
4082	3	71.80 329.99	876(21)
4083	7	71.80 332.39	876(21)
4084	7	71.80 332.79	876(21)
4086	4	71.80 333.19	876(21)

Table 6. Seasat Greenland Geographical Data Base (Cont.)

BIN NUMBER	NUMBER PTS	LAT-LONG SW CORNER	REV (NUMBER PTS)
4088	5	71.80 334.79	1405(1) 1491(4)
4090	10	71.80 335.59	444(6) 1291(3)
4112	5	71.90 304.40	776(5) 1377(3)
4113	3	71.90 304.80	230(2) 776(1)
4114	4	71.90 305.20	273(1) 776(3)
4115	1	71.90 305.60	273(1) 776(1)
4119	1	71.90 307.20	273(1) 776(1)
4121	19	71.90 308.00	273(8) 517(7)
4122	6	71.90 308.40	460(2) 1034(2)
4123	16	71.90 308.80	560(4) 804(12)
4124	38	71.90 309.20	173(7) 417(3)
4125	38	71.90 309.60	158(1) 173(3)
4126	43	71.90 310.00	804(21) 460(1)
4127	53	71.90 310.40	1034(9) 460(1)
4128	85	71.90 310.80	158(1) 466(3)
4129	15	71.90 311.20	1148(18) 503(2)
4130	66	71.90 311.60	1019(3) 1191(6)
4131	51	71.90 312.00	847(20) 1019(1)
4132	170	71.90 312.40	259(10) 847(20)
		158(18) 201(21)	259(21) 445(20)
		546(9) 646(10)	259(11) 445(20)
		1234(9) 158(9)	259(17) 445(20)
4133	177	71.90 312.80	201(19) 244(17)
4134	120	71.90 313.20	546(17) 689(18)
4135	136	71.90 313.60	201(18) 244(21)
4136	140	71.90 314.00	1019(1) 445(21)
4137	146	71.90 314.40	201(4) 244(21)
4138	134	71.90 314.80	790(21) 244(21)
4139	150	71.90 315.20	833(21) 287(21)
4140	182	71.90 315.60	244(21) 287(21)
4141	168	71.90 316.00	790(21) 244(21)
4142	169	71.90 316.40	833(21) 287(21)
4143	167	71.90 316.80	833(21) 287(21)
4144	182	71.90 317.20	187(21) 431(21)
4145	164	71.90 317.60	187(21) 431(21)

Table 6. Seasat Greenland Geographical Data Base (Cont.)

BIN NUMBER	NUMBER PTS	LAT-LONG SW CORNER		REV (NUMBER PTS)	
		187(21)	230(21)	431(21)	474(21)
4146	155	71.90	318.00	230(21)	431(21)
4147	135	71.90	318.40	230(14)	431(16)
4148	136	71.90	318.80	230(21)	431(16)
4149	144	71.90	319.20	230(20)	430(21)
4150	146	71.90	319.60	230(21)	430(21)
4151	130	71.90	320.00	230(19)	459(17)
4152	105	71.90	320.40	230(21)	459(19)
4153	113	71.90	320.79	230(21)	459(21)
4154	120	71.90	321.19	230(21)	459(21)
4155	124	71.90	321.59	230(16)	459(21)
4156	77	71.90	321.99	230(19)	502(21)
4157	85	71.90	322.39	230(21)	502(21)
4158	78	71.90	322.79	230(17)	502(21)
4159	84	71.90	323.19	230(17)	502(21)
4160	103	71.90	323.59	230(17)	502(21)
4161	105	71.90	323.99	230(18)	502(21)
4162	130	71.90	324.39	230(18)	502(21)
4163	122	71.90	324.79	230(18)	502(21)
4164	72	71.90	325.19	230(18)	502(21)
4165	52	71.90	325.59	230(18)	502(21)
4166	38	71.90	325.99	230(18)	502(21)
4167	47	71.90	326.39	230(18)	502(21)
4168	26	71.90	326.79	230(18)	502(21)
4169	15	71.90	327.19	230(18)	502(21)
4170	16	71.90	327.59	230(18)	502(21)
4171	7	71.90	327.99	230(18)	502(21)
4172	5	71.90	328.39	230(18)	502(21)
4173	2	71.90	328.79	230(18)	502(21)
4174	21	71.90	329.59	230(18)	502(21)
4175	6	71.90	329.99	230(18)	502(21)
4176	4	71.90	330.39	230(18)	502(21)
4177	7	71.90	330.79	230(18)	502(21)
4178	1	71.90	331.19	230(18)	502(21)
4179	1	71.90	331.59	230(18)	502(21)
4180	11	71.90	331.99	230(18)	502(21)
4181	11	71.90	332.39	230(18)	502(21)
4182	6	71.90	332.79	230(18)	502(21)
4183	26	71.90	333.19	230(18)	502(21)
4184	10	71.90	333.59	230(18)	502(21)
4185	4	71.90	333.99	230(18)	502(21)
4186	3	71.90	334.79	230(18)	502(21)
4187	2	72.00	304.40	230(18)	502(21)
4212	7	72.00	304.80	230(18)	502(21)
4213					

Table 6. Seasat Greenland Geographical Data Base (Cont.)

BIN NUMBER	NUMBER PTS	LAT-LONG SW CORNER	REV (NUMBER PTS)
4214	2	72.00 305.20	1435(1)
4215	24	72.00 305.60	1220(1)
4216	10	72.00 306.00	1206(1)
4217	9	72.00 306.40	1306(1)
4220	3	72.00 307.60	1306(3)
4221	32	72.00 308.00	1435(3)
4222	34	72.00 308.40	187(2)
4223	155	72.00 308.80	1220(10)
		187(14)	259(2)
		517(7)	1435(3)
		632(12)	273(7)
		675(12)	273(7)
4224	101	72.00 309.20	833(12)
		187(7)	876(13)
		259(4)	1306(14)
4225	195	72.00 309.60	718(13)
		187(18)	230(14)
		517(19)	876(15)
		632(11)	259(14)
4226	139	72.00 310.00	833(33)
		187(13)	1220(33)
		632(12)	1220(33)
		675(14)	273(9)
4227	32	72.00 310.40	876(2)
		1220(8)	1435(3)
		1474(6)	1392(3)
4228	137	72.00 310.80	273(6)
		187(9)	1220(33)
		560(9)	632(7)
4229	290	72.00 311.20	804(7)
		187(21)	833(5)
		230(19)	876(7)
		560(18)	273(6)
4230	160	72.00 311.60	632(18)
		804(19)	632(19)
		876(19)	876(16)
		1220(21)	876(16)
4231	129	72.00 312.00	187(8)
		230(18)	273(12)
		560(14)	603(21)
		603(21)	230(18)
4232	291	72.00 312.40	804(5)
		187(21)	833(5)
		230(15)	847(1)
4233	343	72.00 312.80	560(21)
		603(21)	273(20)
		632(18)	431(21)
		690(21)	632(18)
4234	299	72.00 313.20	158(3)
		517(3)	187(2)
		560(21)	230(21)
		718(20)	603(21)
		761(21)	804(21)
		890(1)	603(21)
		718(19)	603(21)
		761(20)	804(17)
		1019(2)	833(19)
		158(19)	273(18)
		187(21)	632(21)
		560(19)	833(19)
4235	300	72.00 313.60	158(2)
		517(20)	187(8)
		560(21)	230(21)
		718(19)	603(19)
		761(20)	804(17)
		890(8)	833(19)
		158(19)	273(21)
		187(21)	632(21)
		560(19)	833(21)
4236	384	72.00 314.00	474(20)
		517(21)	560(19)
		675(18)	718(21)
		689(9)	718(21)
		890(21)	1019(21)

Table 6. Seasat Greenland Geographical Data Base (Cont.)

BIN NUMBER	NUMBER PTS	LAT-LONG SW CORNER	REV (NUMBER PTS)
4237	432	72.00 314.40	158(21) 187(21) 201(17) 230(20) 273(21) 431(21)
			474(21) 517(21) 560(20) 603(21) 646(20)
			675(21) 689(21) 718(21) 761(21) 847(20)
4238	434	72.00 314.80	158(21) 187(21) 201(21) 230(21) 273(20) 431(21)
			445(21) 474(21) 517(21) 560(20) 603(21) 646(21)
			675(21) 689(21) 718(20) 761(20) 804(19) 847(21)
4239	417	72.00 315.20	158(20) 187(21) 201(21) 230(21) 273(21) 431(21)
			445(21) 474(21) 517(20) 560(21) 603(21) 646(21)
			675(19) 689(21) 718(21) 761(21) 804(20) 847(21)
4240	389	72.00 315.60	158(21) 187(14) 201(21) 230(21) 273(21) 431(21)
			445(21) 474(21) 517(20) 560(21) 603(21) 646(21)
			603(21) 646(21) 689(20) 718(21) 761(21) 804(21)
4241	391	72.00 316.00	158(21) 201(21) 230(21) 244(21) 273(21) 445(20)
			474(21) 488(19) 517(21) 560(20) 603(21) 646(20)
			689(21) 718(21) 761(21) 804(21) 847(19) 890(20)
4242	391	72.00 316.40	158(21) 201(21) 230(20) 244(21) 273(21) 445(21)
			474(21) 488(21) 517(21) 560(21) 603(18) 646(21)
			689(21) 718(21) 761(18) 804(20) 847(21) 890(21)
4243	384	72.00 316.80	158(20) 201(21) 230(21) 244(21) 273(20) 445(21)
			474(17) 488(21) 517(21) 560(21) 603(21) 646(21)
			689(21) 718(14) 761(19) 804(21) 847(21) 890(21)
4244	358	72.00 317.20	158(21) 201(21) 230(20) 244(21) 273(21) 287(14)
			445(21) 488(21) 517(20) 560(21) 603(21) 646(21)
			689(20) 761(21) 775(7) 804(21) 847(20) 890(21)
4245	343	72.00 317.60	158(21) 201(20) 244(20) 273(1) 287(21) 445(20)
			488(20) 517(21) 560(20) 603(17) 646(20) 689(21)
			761(19) 775(20) 804(20) 847(21) 890(20) 1019(21)
4246	345	72.00 318.00	158(21) 201(21) 244(21) 287(21) 646(21) 689(17)
			517(21) 560(21) 603(18) 646(21) 689(21) 1019(21)
			775(21) 804(21) 847(21) 890(21) 1019(21) 445(21)
4247	344	72.00 318.40	158(21) 201(21) 244(21) 287(21) 646(21) 689(20)
			517(12) 560(21) 603(19) 646(21) 689(20) 761(21)
			775(21) 804(21) 847(20) 890(21) 1019(21) 445(21)
4248	318	72.00 318.80	158(20) 201(21) 244(21) 287(21) 445(21) 488(21)
			560(21) 603(19) 646(21) 689(21) 761(10) 775(18)
			804(21) 847(21) 890(21) 1019(20) 1019(21) 445(21)
4249	301	72.00 319.20	158(21) 201(20) 244(19) 287(20) 445(20) 488(20)
			560(21) 603(20) 646(20) 689(21) 775(17) 804(20)
			847(21) 890(20) 1019(21) 244(21) 287(21) 445(21)
4250	313	72.00 319.60	158(21) 201(21) 244(20) 287(21) 445(21) 488(21)
			560(20) 603(21) 646(21) 689(21) 775(20) 775(20)
			804(21) 847(21) 890(21) 1019(21) 1019(21) 445(21)
4251	315	72.00 320.00	158(21) 201(21) 244(21) 287(21) 445(21) 488(21)
			560(6) 603(21) 646(17) 689(21) 890(20) 775(21)
			804(21) 847(21) 890(21) 1019(21) 1019(21) 445(21)

Table 6. Seasat Greenland Geographical Data Base (Cont.)

BIN NUMBER	NUMBER PTS	LAT-LONG SW CORNER	REV (NUMBER PTS)	
			21	21
4252	314	72.00 320.40	158(21) 603(21) 847(21)	244(21) 646(21) 1019(20)
4253	296	72.00 320.79	158(20) 603(19) 617(18)	244(19) 646(20) 689(21)
4254	284	72.00 321.19	847(21) 603(16) 890(21)	1019(20) 244(20) 646(21)
4255	268	72.00 321.59	158(21) 488(19) 890(21)	1019(18) 172(17) 617(19)
4256	275	72.00 321.99	158(21) 488(12) 890(21)	172(17) 617(19) 1019(16)
4257	258	72.00 322.39	158(14) 488(20) 890(13)	172(21) 617(21) 1019(21)
4258	193	72.00 322.79	201(21) 574(6) 617(17)	244(21) 244(20) 75(21)
4259	186	72.00 323.19	201(18) 574(6) 617(17)	244(18) 244(17) 75(21)
4260	186	72.00 323.59	172(2) 488(21) 617(17)	201(21) 244(21) 617(17)
4261	168	72.00 323.99	201(21) 574(3) 617(17)	244(21) 244(3) 689(17)
4262	143	72.00 324.39	201(17) 488(20) 617(17)	244(6) 258(6) 75(17)
4263	125	72.00 324.79	172(21) 775(21)	258(20) 258(21)
4264	120	72.00 325.19	244(3) 775(17)	258(3) 258(17)
4265	66	72.00 325.59	258(20) 258(21)	287(10) 775(19)
4266	40	72.00 325.99	172(11) 258(10)	617(10) 459(19)
4267	49	72.00 326.39	287(22)	459(16)
4268	18	72.00 326.79	172(12) 258(11)	258(1) 258(1)
4270	13	72.00 327.59	172(19) 617(10)	258(1) 631(14)
4272	18	72.00 328.39	172(11) 588(2)	588(1) 617(3)
4273	18	72.00 328.79	172(11) 617(10)	588(1) 631(14)
4274	24	72.00 329.19	832(7) 631(7)	832(7) 588(2)
4275	7	72.00 329.59	631(7) 186(3)	832(7) 588(2)
4277		72.00 330.39	186(3) 186(3)	186(3) 186(3)
4278	5	72.00 330.79	186(3) 186(3)	186(3) 186(3)
4279	13	72.00 331.19	186(3) 186(3)	186(3) 186(3)
4280	6	72.00 331.59	186(3) 186(3)	186(3) 186(3)
4281	5	72.00 331.99	186(3) 186(3)	186(3) 186(3)
4282	15	72.00 332.39	186(3) 186(3)	186(3) 186(3)
4283	8	72.00 332.79	186(3) 186(3)	186(3) 186(3)
4284	9	72.00 333.19	717(7) 516(9)	875(2) 272(2)
4285	40	72.00 333.59	516(2)	516(9)
4286	2	72.00 333.99	186(7)	272(1)
4287	20	72.00 334.39	186(6)	272(10)
4288	21	72.00 334.79	473(2)	473(3)

Table 6. Seasat Greenland Geographical Data Base (Cont.)

BIN NUMBER	NUMBER PTS	LAT-LONG SW CORNER				REV (NUMBER PTS)			
		72.00	335.19	72.00	335.59	72.00	335.99	72.00	335.99
4289	1	72.00	335.19	72.00	335.59	72.00	335.99	72.00	335.99
4290	25	186(1)	473(1)	186(1)	473(1)	186(1)	473(1)	186(1)	473(1)
4291	12	1434(1)	272(2)	1477(1)	631(2)	1477(1)	631(2)	1477(1)	631(2)
		186(4)	272(4)	186(4)	272(4)	186(4)	272(4)	186(4)	272(4)

Table 7. Seasat Geo-referenced Data Base Header Description

FILE 1:

GEO-REFERENCED DATA BASE HEADER RECORD

Record Format: One logical record corresponds to one physical record
Blocksize: 480 Bytes

<u>Bytes</u>	<u>FORTRAN Variable</u>	<u>Type</u>	<u>Description</u>
1-4		I*4	Number of latitude rows in the data base (56)
5-8		I*4	Northwestern-most latitude of data base in degrees North (x 10 ⁵) (7210000)
9-12		I*4	Northwestern-most longitude of data base in degrees East (x 10 ⁵) (30000000)
13-16		I*4	Southeastern-most latitude of data base in degrees North (x 10 ⁵) (5990000)
17-20		I*4	Southeastern-most longitude of data base in degrees East (x 10 ⁵) (34000000)
21-244		I*4	Width of each latitude row in degrees (x 10 ⁵), starting with the southernmost row. This is dimensioned by the number of latitude rows in the data base.
245-468		I*4	The number of longitude divisions in each latitude row, starting with the southernmost row. This is dimensioned by the number of latitude rows in the data base.
469-472		I*4	Logical record in data base at which directory starts.
473-476		I*4	Size of the data base, including the directory, in blocks.
477-480		I*4	Status word for altimetry data.

<u>Bits</u>	<u>value</u>	<u>Description</u>
0-23	0	Unused
24	1	Slope correction applied
	0	Slope correction not applied
25	1	Orbit adjustment applied
	0	Orbit adjustment not applied
26	1	Solid tides removed
	0	Solid tides not removed

Table 7. Seasat Geo-referenced Data Base Header Description (Cont.)

(477-480 Cont.)	<u>Bits</u>	<u>Value</u>	<u>Description</u>
27	1	Retracking correction applied	
	0		Retracking correction not applied
28	1	Center of gravity bias applied	
	0		Center of gravity bias not applied
29	1	Tropospheric correction applied	
	0		Tropospheric correction not applied
30	1	Ionospheric correction applied	
	0		Ionospheric correction not applied
31	1	Time bias applied	
	0		Time bias not applied

Table 8. Seasat Geo-referenced Data Base Description

FILE 2: **GEO-REFERENCED DATA BASE**
 Record Format: 595 logical records correspond to one physical record
 Blocksize: 19040 Bytes

Subgroup 1: One logical record for each bin containing data

<u>Bytes</u>	<u>FORTRAN Variable</u>	<u>Type</u>	<u>Description</u>
1-4		I*4	Indicates the number of logical records which follow which are located in the bin
5-32			Unused

Subgroup 2: One logical record for each data point in the bin

<u>Bytes</u>	<u>FORTRAN Variable</u>	<u>Type</u>	<u>Description</u>
1-4		I*4	North latitude of datum point in degrees (x 10 ⁶)
5-8		I*4	East longitude of datum point in degrees (x 10 ⁶)
9-12		I*4	Surface height relative to the ellipsoid in cm.
13-16		I*4	Height sigma, arbitrary value of 1.0 m used (x 10 ⁵)
17-18		I*2	Rev number
19-20		I*2	Used for temporary flags when gridding the data
21-24		I*4	Orbit adjustment in meters (x 10 ⁵) (-999999999 if unavailable)
25-28		I*4	RMS of orbit adjustment in meters (x 10 ⁵) (-999999999 if unavailable)
29-32		I*4	Slope correction in meters (x 10 ⁵) (-999999999 if unavailable)

NOTE: Subgroups 1 and 2 are repeated for as many bins with data.

Table 8. Seasat Geo-referenced Data Base Description (Cont.)

Subgroup 3: Directory

<u>Bytes</u>	<u>FORTRAN Variable Type</u>	<u>Description</u>
1-4	I*4	Record number at which data for bin 1 starts
5-8	I*4	Record number at which data for bin 2 starts
9-12	I*4	Record number at which data for bin 3 starts
13-16	I*4	Record number at which data for bin 4 starts
17-20	I*4	Record number at which data for bin 5 starts
21-24	I*4	Record number at which data for bin 6 starts
25-28	I*4	Record number at which data for bin 7 starts
29-32	I*4	Record number at which data for bin 8 starts

NOTE: The directory contains as many 32-byte logical records as necessary to designate the record locations of all bins.

Table 9. Elevation Grid Header Description

FILE 4: **ELEVATION GRID HEADER RECORD**
 Record Format: One logical record corresponds to one physical record
 Blocksize: 80 Bytes

<u>Bytes</u>	<u>FORTRAN Variable</u>	<u>Type</u>	<u>Description</u>
1-4		I*4	Number of latitude increments in the grid for a non-polar stereographic grid (140)
5-8		I*4	Number of longitude increments in the grid for a non-polar stereographic grid (152)
9-12		I*4	Starting north latitude of grid in degrees North (x 10 ⁶) (this will be approximate for a polar stereographic grid) (50000000)
13-16		I*4	Starting east longitude of grid in degrees East (x 10 ⁶) (this will be approximate for a polar stereographic grid) (300000000)
17-20		I*4	Ending north latitude of grid in degrees North (x 10 ⁶) (this will be approximate for a polar stereographic grid) (73000000)
21-24		I*4	Ending east longitude of grid in degrees East (x 10 ⁶) (this will be approximate for a polar stereographic grid) (340000000)
25-28		I*4	Status word for data used to generate grid. A zero in any bit position indicates that the correction is not applied.

<u>Bits</u>	<u>Value</u>	<u>Description</u>
0-23		Unused
24	1	Slope correction applied
	0	Slope correction not applied
25	1	Orbit adjustment applied
	0	Orbit adjustment not applied
26	1	Solid tides removed
	0	Solid tides not removed
27	1	Retracking correction applied
	0	Retracking correction not applied
28	1	Center of gravity bias applied
	0	Center of gravity bias not applied
29	1	Tropospheric correction applied
	0	Tropospheric correction not applied
30	1	Ionospheric correction applied
	0	Ionospheric correction not applied
31	1	Time bias applied
	0	Time bias not applied

Table 9. Elevation Grid Header Description (Cont.)

<u>Bytes</u>	<u>FORTRAN Variable</u>	<u>Type</u>	<u>Description</u>
29-32		I*4	Polar stereographic grid size conversion and scaling factor from half-inch grids on projection plane to the desired grid size ($\times 10^6$) (1650000)
33-36		I*4	The number of grids of desired size from the pole to the equator based on the grid size conversion and scaling factor ($\times 10^6$) (608754894)
37-40		I*4	Latitude of the map perimeter in degrees North ($\times 10^6$) (500000000)
41-44		I*4	Greenwich orientation in degrees ($\times 10^6$) (450000000)
45-48		I*4	Polar stereographic switch (1) =0, grid has constant increment in latitude and longitude =1, grid is in polar stereographic projection
49-52		I*4	Number of I-axis divisions to the extent of the map perimeter (445)
53-56		I*4	Number of J-axis divisions to the extent of the map perimeter (445)
57-60		I*4	J coordinate of the projected pole (223)
61-64		I*4	I coordinate of the projected pole (223)
65-68		I*4	Minimum J index of the grid (166)
69-72		I*4	Maximum J index of the grid (317)
73-76		I*4	Minimum I index of the grid (305)
77-80		I*4	Maximum I index of the grid (444)

Table 10. Elevation Grid Description

FILE 5: ELEVATION GRID DATA RECORD
 Record Format: 10 logical records correspond to one physical record
 Blocksize: 1800 Bytes

FORTRAN			
<u>Bytes</u>	<u>Variable</u>	<u>Type</u>	<u>Description</u>
1-4		I*4	Condition number of the matrix used in the least-squares solution to the function (x 10 ⁶)
5-8		I*4	Capsize in degrees latitude - radius from grid location defining area from which data was used to define grid (x 10 ⁶)
9-12		I*4	North latitude of grid point in degrees (x 10 ⁶)
13-16		I*4	East longitude of grid point in degrees (x 10 ⁶)
17-20		I*4	Height values of the grid at location relative to sea level in meters (x 10 ⁵)
21-24		I*4	Number of data values that were used to calculate grid value
25-28		I*4	Number of parameters used to define function, NPT, (equals 0, 3, or 6)
29-52		I*4	Six gridding function coefficients. If NPT is < 6 then the rest of the coefficients are initialized to zero. (x 10 ⁵)
53-76		I*4	Set of null coefficients associated with any negligible singular values (see SVD reference). If NPT is < 6 then rest of coefficients are initialized to zero (x 10 ⁶)
77-80		I*4	Distance in km from grid locations to closest data point (x 10 ⁶)
81-84		I*4	North latitude of closest data point to grid location in degrees (x 10 ⁶)
85-88		I*4	East longitude of closest data point to grid location in degrees (x 10 ⁶)
89-92		I*4	Height associated with closest data point to grid location in meters (x 10 ⁵)
93-96		I*4	Standard deviation of the data with respect to the gridding function in meters (x 10 ⁶)
97-180		I*4	Correlation matrix from solution. This is a symmetrical 6 X 6 matrix so only the upper triangular portion is stored. The order of storage is elements 1-6 are the first row elements, 7-11 columns 2-6 of second row etc. (x 10 ⁵)

NOTE: Ten of the above-mentioned 180-byte logical records make up one block of data.

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16. Abstract The data processing methods and ice data products derived from Seasat radar altimeter measurements over the Greenland ice sheet and surrounding sea ice are documented in this first volume of a series. The corrections derived and applied to the Seasat radar altimeter data over ice are described in detail, including the editing and retracking algorithm to correct for height errors caused by lags in the automatic range tracking circuit. The methods for radial adjustment of the orbits and estimation of the slope-induced errors are given. The various levels of ice data sets are described in this report, but the user is referred to Volumes 2 (Greenland) and 4 (Antarctica) for more detailed descriptions of the gridded elevation data sets and the geo-referenced data bases.			
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